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STILLMAN DRAKE

THE
New PLANET no PLANET;
OR,
The EARTH no wandring STAR;
Except in the wandring heads of
GALILEANS.

HERE
Out of the Principles of Divinity, Philosophy,
Astronomy, Reason, and Sense, the Earth's immobility is
asserted; the true sense of Scripture in this point, cleared;
the Fathers and Philosophers vindicated; divers Theologicall
and Philosophicall points handled,
AND
COPERNICUS, his Opinion, as erroneous, ridiculous,
and impious, fully refuted.

By ALEXANDER ROSSE.

In answer to a Discourse, that the Earth may
be a PLANET.

LACTANT. de falsâ Sapientiâ lib. 3. cap. 24.

*Quid dicam de iis nescio, qui cum semel aberraverint, constanter
in stultitia perseverant, & vanis vana defendunt, nisi quod eos
interdum puto, aut joci causâ philosophari, aut prudentes &
scios mendacia defendenda suscipere, quasi ut ingenia sua in ma-
lis rebus exerceant vel ostentent.*

LONDON.

Printed by J. Young, and are to be sold by Mercy Meighen,
and Gabriel Bedell, next to the middle-Temple-
gate. 1646.

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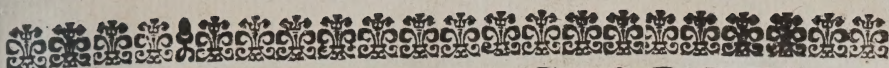
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To the Right honourable *G E O R G E* Lord
B E R K L E Y, Baron of *Berkley*, &c.

My Lord,

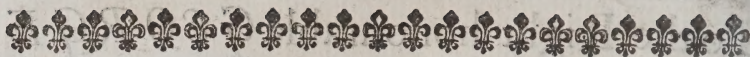


Hey who have been long at sea, when they come on shore, think that the Earth moveth as the Sea did, till their brains be settled; even so these men who have been lately travelling in the new found world of the Moon, which swiftly moveth about the Earth, think when they come down hither, that it is the Earth which moveth: This false imagination I have endeavoured to remove in this Book, which now comes abroad under your Lordships Name; the reason of my dedication is, because I understand by your Lordship, that the Gentleman, who came down a while agoe from the Moon, with newes of a late discovery there, is of this opinion; and one who hath relation to your Lordship, which indeed I knew not till now, that the Book is almost printed: my other reason is, for that I am bound in a dutifull recognition of your Lordships respects to scholars in generall, and to me in particular; which sheweth that not only are you noble by extraction, but by your affection also and disposition to learning, which is now so much slighted, yea vilified, by such as are either ignorant, or wicked; the one slight learning, because they know it not, — *ignoti nulla cupido*; and like the Fox in the Fable, disparage the grapes, because he could not reach them; the other raile against learning, as the mad Africans do against the Sun; and how can Owles and Bats love the light, which manifest their deformity? Can theeves and cut-throats, whilst they are penetrating the works of darknesse, abide the light of a torch? The infernall ghosts tremble to see any light,

— *trepdiant immisso lumine manes*:

But your Lordship, being *de meliore luto*, — knowes the worth of learning, and therefore loves it; which that you may long know, love, and live, shall be the wish of

Your Honours most humble servant to command,
 ALEXANDER ROSS.



To the READER.

GOOD Reader, there is a namelesse man come down from the Moone, who brings us strange newes of a late discoverie, to wit, of a world found there; This man of the Moone goeth about to perswade us, in a booke which he hath set out, come lately to my hands; that the world, ever since Adam, hath been in a dreame, in thinking that the heavens move, and the earth rests: He tells us another tale, to wit, that it is the earth that moveth, and the heavens stand still: He lieth in ambush, and from his darke lurking place, shoots abroad his arrowes; so that we can no more see him, then if he were in the Moone still; but it is a cowardly part to hide himselfe, and from the cloud, in which he is wrapt, to let fly his darts against me, and that Book which a few yeares agoe I wrote in Latine, in confutation of this new phantastickall Chimera. My case is like that of Volscus in the Poet, who knew not whence those darts came that killed Sulmo and Tagus,

Sævit atrox Volscus, nec teli conspicit usquam
Authorem, nec quo se ardens immittere possit.
I might be thought, luctari cum larvis, to fight against shadowes, as Æneas did going down to hell.

If I should make any reply to a namelesse disputer, but I am advised however to answer him, least he should sing (*id triumphe,*) and not to suffer by silence my reputation to be wounded, the truth prejudiced; and the Scriptures abused, with his idle glosses. Therefore here I present to thee the weaknesse and vanities of this mans conceits, as far as the shortnesse of time, and my other studies and affaires would permit me; which I pray thee accept in good part, and so farewell.

The PREFACE.

THE title of this new book is a may be (that the Earth may be a Planet) but I say that may not be: For a Planet is a wandering starre, and the Earth is not a starre in its essence, nor a wanderer in its motion. And indeed you wrong our common mother, who so many thousand yeares hath been so quiet and stable, that now she should become a wanderer in her old age; but if she may be a Planer, tell us whether she may be one of the seven Planets, who are called *Errones* in Latine, (not for that they have an erroneous, but because they have a various motion) or whether she may be an eighth Planet, that so wee may make up our week of eight dayes; for why should not mother Earth have one day of the week, aswell as the other Planets, to carry her name? And so let there be *dies terre*, aswell as *dies Solis*, & *Luna*, Earth day, aswell as Sunday, or Moonday; and whereas the Planets are moved according to the motion of the spheares, you had done us a pleasure, if you had told us the spheare in which the Earth moveth: Againe, if the Earth be a Planet, and each Planet hath its period of time for finishing its course: *Saturne* 30. yeares, *Jupiter* 12. *Mars* 2, &c. What is the time which you will allot to the Earth for the accomplishing of her annuall motion? If it be true, that the lower the Planet is, the swifter it is in its annuall motion; as the Moon in 27. dayes, and 8. houres, doth finish her course, which *Saturne* ends not but in 30. yeares space; doublelesse, this Earth-planet, being the lowest of all, must in a very short time expire its annuall race. Moreover, if the Earth be the right Planet, *Sol*, who is the King of this planeticall Common-wealth, cannot have his throne in the midle, as Antiquity, and Truth too have placed him; for hee shall have three on his one hand, and four on the other, and so cannot impart his light equally to all. And whereas every one of the Planets hath his office in this Reipublick; to wit, *Saturne* the Counciller, *Jupiter* the Judge, *Mars* the Captaine, *Venus* the Steward, *Mercury* the Scribe or Chancellor, and the *Moone* the Messenger: Wee must needs finde out some office for the Earth, otherwise she will be counted idle, and none of the Planets. But that the Earth may be a Planet, is as true as that the Sun may be a burning stone, that there may be a man in the Moon, that there may be an infinite number of Suns and worlds, that the Stars and Planets may have had their first originall and being from the Earth, which have been the extravagant conceits of giddy headed Philosophers: But I remember what *Aristotle* saith of some may-bees or possibilities; *Διωκεται τι ου ειναι η γενεσθαι, ου ειναι δ, ουδε εσθαι* that which may be, may not be, and never shall be, and so the Earth may be a Planet; that is, it neither is, nor ever shall be a Planet. But now let us leave your title, and examine the substance of your following Discourse.



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The new PLANET NO PLANET.

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CHAPT. I.



Had shewed how unreasonable it was, that an upstart novelty concerning the Earth's *Cont. Lans. bevgium, l. 1. sect. 1. 6-20.* motion, should thrust out a truth of so long continuance and universality, as this of the Earth's immobility. You answer, *That wee must not so doat upon antiquity, as to count that Canonically, which is approved by the consent of the Ancients.* To this I answer: 1. Make it ap-

peare that your opinion of the Earth's motion is true, and ours false; and we will prefer yours, though new. 2. If you can make it appear that your opinion is any waies usefull or advantageous, wee will admit it. 3. Suppose that both your and our opinion were but conjecturall, and that there were but an equall probability in both; yet you must not prefer, nor equall your opinion to ours, because we have antiquity and consent of all times, of all nations, of so many holy, wise, and learned men for us, which you want; in this respect then, if both our opinions were put in the balance, yours will be found too light, though you should adde to the scale that heavie Prussian *Copernicus*. 4. Though there were no hurt in your opinion, yet wee may not entertaine it; for the world is pestered with too many opinions already; and a great many might be well spared. 5. But whereas your opinion is false, absurd, and dangerous, as we have partly shewed, and will shew afterwards,

wee were mad to receive it ; having neither truth, reason, sense, consent, antiquity, or universality to countenance it. 6. That which you call the preserving of Philosophicall libertie, is indeed the loosing of the reines to exorbitant wits, to run headlong into every kinde of absurdity. 7. Wee doe not inflave our selves to the opinion of any one man, (as you suppose we doe) but we are of the opinion of all men, of all times, and nations. You inflave your selfe to one man, and is guilty of that which you accuse in us : *Quis tulerit Gracchos ?* 8. Wee condemne not your opinion because it is new, but because not true. A new fallhood, a false novelty; and such a new deformed brat is to be choaked in the infancy : *Principiis obsta* ; kill the Cockatrice in the egge. 9. You say it's but a novelty in Philosophy, but I say it intrencheth upon Divinity : for Divinity tells us, that the standing of the sun, and moving of the earth are the miraculous workes of Gods supernaturall power : your new Philosophy tells us, that they are the ordinary workes of Nature ; and so this scope being granted, you may turn Divinity into naturall Philosophy, and confound the works of God, and of Nature. 10. You tell us, *That Antiquity consists in the old age of the world, not in the youth of it.* What Antiquity ? Of the world ? then you speak not properly, as you say you doe, but tautologically ; the worlds old age consists in its old age. If you mean that your opinion is not new, but old, because the world is old, you speak absurdly : for old opinions are so called, not because they were found out in the youth, or in the old age of the world, but because they have continued a long time in the world ; and so new opinions are new, though found out in the old age of the world. Opinions have no relation to the ages of the world, but to their owne continuance. Are you older then your great Grand-father, because the world is older now, then it was when hee lived ? 11. *You are the fathers (you say) in such learning as may be increased by experiments and discoveries, and of more authority then former ages.* Why doe you not tell us plainly, that you are fathers of learning, as well as in learning ? but indeed you are not the fathers of learning, you are onely fathers of your new discoveries and fresh experiments ; that is, of new, fond, and favourlesse phantasies : and why you must be of more authority then former ages, I see no reason. Shall not *Jubal*, and *Tubal-Cain*, the inventors and fathers of their Arts, be of as great authority, as you that are the fathers of such mishapen monsters, though they lived in the infancy,

cy, and you in the old age of the world? Why should I rather credit you in telling us of a world in the Moon, and of the Earth, that it is a planet, then those wise men of former ages, who never dreamt of such idle and ridiculous conceits? You say, *Truth is the daughter of time*; so say I, but errors, heresies, falshoods, are times daughters too. We see how fruitfull this later age of the world is of new and frivolous opinions. But how much are you beholding to old mother Time, who hath bettowed her eldest daughter, Truth, upon you, having past by so many worthy Suitors in all ages? this is a transcendent favour, you are *homo per paucorum hominum*, and have been wrapped in your mothers smock. 12. *In leaving us to our liberty, to accept or reject your opinion*; I perceive you have no great confidence in your new married wife, Times daughter: you mistrust your cause, and the validity of your arguments; and that you have employed your pen more to shew your wit, then to evince our understanding.

2. *You will not have this Philosophicall doubt decided by common people, for they judge by their senses, nor yet by the holy Fathers, for they were ignorant (you say) in this part of learning.* Aristotle you have already disabled, for his works are not necessarily true; and, I say, it is not fit that you should be Judges in your owne cause. Whom then will you name for Judges, seeing Scriptures, Fathers, senses, Peripateticks, are rejected; reasons and arguments you have none: I think you must be faine to call for some of your people out of the Moon. *Juno Lucina. fer opem.* But in calling of the Fathers ignorants in this part of learning, you doe them wrong; for they were neither ignorant of Philosophy, nor of Astronomy; they condemned the idle opinions of both; amongst the rest, that of the *Antipodes*. For although I deny not the *Antipodes*, yet the

* Philosophers opinions concerning them were vaine: as, That they inhabited that Region to which the sun riseth, when it sets with us. 2. In that they could not tell how these people came thither, seeing the vast ocean, beyond the straight of Gibraltar, was not navigable; and they confessed that it could not be passed. 3. The reasons which they alledged to prove *Antipodes* were not demonstrative, nor experimental, but meerly conjecturall; so that the Fathers could receive no satisfaction from their reasons. 4. They held that those *Antipodes* were another race of men, then these of this hemisphere, and that they had been there perpetually; and that they neither could, nor ever should know what kind of men they were. 5. They did

* Plin. li. 2. cap. 65.
August. de civit. li. 16. cap. 9.
Macrob. in som. Scipionis. li. 2. c. 5.
Lactanti. de falsis Sapien. li. 3. cap. 24.

waver in their opinion, sometimes saying that the western people were *Antipodes* to us; sometimes the Southerne people; sometime confounding *Antipodes* and *Antichithones*. 6. They would necessarily inferre from the roundnesse of the earth, that the lower hemisphere was dry earth, and inhabited with people: the consequence of which S. *Austine* denies. 7. They held that the opposite earth to ours had an opposite motion. Of these, and other vaine opinions concerning *Antipodes*, you may see in *Pliny*, *Austine*, *Macrobius*, *Lactantius*, &c. It was not then out of ignorance, or peevishnesse, but upon good grounds and reasons, that they denied *Antipodes*, as the Philosophers esteemed of them. Otherwise S. *Austin* knew and acknowledged there might be *Antipodes*. 2. What though the Fathers or *Aristotle* had been ignorant in this point, must therefore their authority in other points be slighted? must their failing in one or two points of Philosophy, lessen their credit in all Philosophicall truths? What if they had been ignorant in some one point of Divinity, must we therefore reject their authority in other points? The Apostles were ignorant of the day of Judgement, and of some other points; yet wee beleieve them never a whit the lesse in all other points. 3. There is odds between denying of *Antipodes*, and denying the motion of the Earth, and standing of the Sun: For the reasons which Philosophers brought to prove *Antipodes*, were neither experimentall, nor demonstrative, nor any waies satisfactory; but for the stability of the earth, and motion of heaven, wee have both sense, reason, authority, divine and humane, consent, antiquity, and universality, as is said; and what can be wanting to confirme a truth, which wee have not to confirme this? 4. You say, That Solomon was strangely gifted with all kinde of knowledge: then would I faine know why hee did not plainly tell us, (being so great a Philosopher) that the Earth moved, and that the Sun stood still; but quite contrary proves the transient vanity of humane affaires, from the earth's stability, and constant motion of the sun.

3. *Job*, (you say) for all his humane learning, could not answer these naturall questions which God proposeth to him: as, Why the sea should be so bounded from overflowing the land. What is the breadth of the earth? What is the reason of snow or haile, raine or dew, yce or frost? which any ordinary Philosopher in these daies might have resolved. Answer. You would make *Job*, who was both a King and a Priest, a very simple man, if wee would beleieve you. But how know you that *Job* could

not.

not answer God? Mary, because hee sayes of himselfe, *That hee Job 42.3.*
uttered that, he understood not: things too wonderfull for him which
hee knew not. But, Good Sir, these words are spoken of the se-
 cret waies of Gods providence, and of his hid and unsearchable
 judgements, which are these wonderfull things that *Job* knew not
 nor understood; for his judgements are a bottomlesse depth, his
 waies are past finding out; and they are not spoken of naturall
 causes of meteors. I pray, were there not haile and snow, raine and
 dew, yce and frost, in those daies, and did not hee know that these
 meteors were generated of vapours, as well as you? or what should
 be the cause of his stupidity, and of your quicknesse of apprehensi-
 on? Alas! how doe wee please our selves in the conceits of our
 supposed knowledge, whereas indeed wee have but a glimmering
 insight in Natures works, a bare superficiall and conjecturall know-
 ledge of naturall causes? Doubtlesse *Job* was not ignorant but mo-
 dest, in acknowledging the insufficiency of Philosophicall reasons,
 and therefore thought it better to be silent, then to shew his folly in
 superficiall and vaine answers: For both Astronomy, and natu-
 rall Philosophy, are arts of Diviners, rather then Disputers; and
 Philosophy is but opinion, saith *Lactantius*; and even in those
 things which Philosophers bragge that they found out, they are
opinantes, potius quam scientes; carried with opinion, rather then
 knowledge, saith *S. Augustine*; which I have found by long experi-
 ence. *Job* knew that though humane and Philosophicall reasons
 would seeme plausible enough to man, yet that God, to whom only
 truth is known, would check him, and account his wisdom but
 folly, to speak with *Lactantius*. If hee had answered God that the
 sea is bounded from overflowing the land, because the drienesse of
 the earth resisteth the moisture of the sea, which is the reason of
 Philosophers; God would have shewed him the folly of his reason,
 by the daily flowing of the sea, on the dry lands; and by the many
 inundations of the sea over whole countries. I doubt not but if
 God had asked you the causes of clouds and raine, you would have
 answered him, that they were generated of moist vapours elevated
 into the aire, and there dissolved or squized by heat or cold; but
 then why be there no clouds nor raine in Egypt, seeing the Sun e-
 levates vapours out of *Nilus*? So you will tell me that hail or snow
 are generated of moist vapours, condensate by cold into that form:
 but then why in the hottest countries, even under the line, are the
 greatest showres and biggest haile? So might I reason with you of

*Lactan. de
 fals. i. Sapi.
 lib. 3. cap. 3.*

*Aug. ad Lau.
 li. 1. cap. 10.*

*Lact. li. 3. ca.
 3. de fals. Sap.*

the other Meteors; but that I will hasten to be rid of this taske, having other imployments.

Cont. Carpen- 4. I had said that there was no credit to be given to *Pythagoras*,
tar. Sect. 2. whom you make a patron of your opinion; because he was both a
c. 10. forcerer, as Saint *Austin* sheweth, and the father of many monstrous
Aug. l. 7. de absurdities, as I have shewed out of *Theodoret*. You would save
Civ. c. 35. his credit by telling us, that all men are subject to errors; and I
Theod. ser. deny it not: but it is one thing for a man to fall into an error ac-
ad Grac. cidentally, and an other thing to broach a multitude of errors.
infid. A man may speake a lie by chance, and that shall not derogate from
his credit; but if he use to lie, I will scarce beleve him when hee
speakes truth. That *Pythagoras* was a witch, his name sheweth from
πυθίος and *δυσσεύς*; either because hee spoke as *Apollo Pythius* did,
falsly and obscurely; or because he was possessed with the Pythian
Spirit, or the Devill who deluded the Gentiles; who appearing
and deceiving them in the forme of the Serpent *Python*, which hee
was said to kill, was called *Pythius*. His causing of an Eagle to flie
to him by certaine conjuring words, and being at the same time
in two severall places, at *Thurii* and *Metapontii*, with many other
Plin. l. 30. such like conjuring tricks, shew what he was. *Pliny* saith, that he
c. 1. went to *Egypt*, and many other places to learne Magicke: the Py-
thagoreans would kill no Serpents, so highly they honoured them.
De Civit. Dei, Saint *Austin* saith out of *Varro*, that *Pythagoras* was much ad-
l. 7. c. 35. dicted to Hydromancie and Necromancie, and to consult the infer-
nall Spirits by blood. And *Tertullian* decipheres him to be a notable
impostor, who to make people beleve his doctrine of transanima-
tion, hid himselfe seaven yeares under ground; macerating his bo-
dy with hunger, thirst, nastinesse: hazarding his health and life
with damps and filth, to confirme a grosse lie. *Quomodo credam non
mentiri Pythagoram, qui mentitur ut credam?* He that will with swea-
ring, lying, and deceiving trickes, perswade us that he was in Hell,
and that he had been *Aethalides*, *Euphorbus*, *Pyrrhus*, and *Hermoti-
mus*, would make small bones to broach such monstrous opini-
ons, as of the motion of the Earth, and immobilitie of the heavens,
out of ambition to get him a name. And this is the goodly Patron
of your opinion. *Dignum patella operculum*. The man of eminent note
and learning as you call him; highly esteemed for his divine wit and rare
inventions. Again when you say, that many of his absurd sayings are to
be understood in a mysticall sense: why will you in a literall sense un-
derstand his sayings of the Earths motion, and Heavens immo-
bilitie?

5. I had said that indeed *Pythagoras* was not the Author of this opinion, for no ancient writer ascribes it to him; you reply, *that many ancient Authors ascribe it to the Pythagorean Sect.* For prooffe whereof, in stead of many authors, you bring one, as if one were a multitude; and that one is *Aristotle.* *Answ.* There is a difference betweene *Pythagoras*, and Pythagoreans; betweene the Scholar and the Master: I spake of *Pythagoras*; *Aristotle*, of the Pythagoreans. The Scholars oftentimes broach opinions which the Masters never knew; it is ordinary in all Heretickes and Sectaries to father opinions on the first founders, and on other learned men, which they never knew nor dreamed of. That impure sect of the Nicolaitans, fathered their opinions on *Nicolas* the Deacon. The Arians would have made the world beleieve that *Origen*, *Dionysius* of *Alexandria*, and *Lucian* the Martyr, had been the authors of their impieties. The Donatists alledge Saint *Cyprian* for the author of their separation from the Catholick Church: and the mad-headed Circumcellions called themselves Donatists. Therefore, when you say that it appeares by *Aristotles* testimony, that *Pythagoras* thought the Earth to be one of the Planets, you are deceived; for he speakes not of *Pythagoras*, but of the Pythagoreans, of which number you are one; not onely for affirming the Earth to be a Planet, but also in holding transanimation; for you make no difference betweene *Pythagoras* and his disciples: thinking (as it seemes) that the soule of *Pythagoras* which had beene in so many bodies before, was now entred into the bodies of the Pythagoreans. 2. I said that *Pythagoras* held, that the heavens by their motions made a muscicall harmonie, which could not consist with the earths motion; you say it may consist, but you doe not prove how it may; tell me, for what end doth the Heaven move? Is it not for the benefit of the Earth? But if the earth move to receive its benefit from the Heaven, surely the Heaven moveth to no end or purpose. Again, you would faine escape by telling us, *That Pythagoras meant by the muscicall concent, i. the proportion and harmony that is in the bignesse and distance of the Orbes.* You tell us so, but how shall we beleieve you? This saying of his is not reckoned amongst his symbollicall speeches; and if it be symbollicall, why not that saying of the Earths motion? Is not that also mysticall?

6. You set down *seaven or eight men of speciall note (as you say) for their extraordinary learning, and for this opinion.* *Answ.* If this opinion makes men to be of speciall note, then you must needs be a noted man;

man, or shall be hereafter, when you are come downe from the Moone, or freed from the cloud that inwraps you, for you are of this opinion: but you might have spared your labour, for these men were Pythagoreans; and I told you before, that Pythagoreans were of this opinion; but few of these were noted men for their extraordinary learning: they were obscure men, and very little spoken of in old Histories. *Aristarchus* the Tyrant, *Aristarchus* the Poet, and that rigid *Aristarchus* the Grammarian, and censurer of *Homer*, were noted men; but not your *Aristarchus* the Mathematician. So *Philolaus*, *Nicetas Syracusanus*, *Ephantus* and *Lysippus* have little said of them: as for *Heraclides Ponticus*, he was a man noted more for his ambition, then for his learning; in that he affected to be a god, causing his friends to convey his dying body out of the way, and a dragon to be laid in his bed: that the world might thinke he was now a dragon; and that he should be worshipped in that forme: and indeed he shewed himselfe to be that, which he desired to be; to wit, a beast, and not a man. $\Sigma\upsilon\delta\epsilon\ \delta\iota\varsigma,\ \epsilon\ \sigma\phi\delta\varsigma\ \alpha\gamma$, as *Diogenes Laertius* speaks of him. As for *Plato* it is not certaine if he were of your opinion, and if he had been, the matter is not great. And as for *Numa Pompilius*, he was not *Pythagoras* his scholar, for he lived about a hundred years before *Pythagoras*; who lived about the time that *Brutus* was Consul, who drove out the Kings, as *Solinus* witnesseth, and *Tullie Livie* saith, that he flourished in the time of *Servius Tullius*. Neither doth *Plutarch* affirme that *Numa* was scholar to *Pythagoras*, but because their institutions were much alike, it was supposed by some (saith he) that *Numa* had familiarity with *Pythagoras*. It is true that *Numa* built a round Temple, not in reference to this opinion of the Earths motion, as you dreame; for he was not of this opinion; but in reference to the roundnesse of the world, as *Plutarch* saith: And he placed the Vestall fire in the middle, not to represent the Sunne in the center of the world, (that is your glosse,) but to represent the site of the elementary fire, which he conceived to be in the midst of the world.

7. Sure, Brag is a good dog with you; for you tell us that there is scarce any of note or skill, who are not Copernicus his followers; and more there are of his opinion, then all the rest put together; and yet you tell us but of one Cardinall Cusanus, and fixe more, to avoide tediousnesse. But in this you speake by the figure Antiphrasis, by contraries: You name but one Cardinall on your side, and within three leaves after, you tell us of two Sessions of Cardinalls on our side who con-

O. 5.

Solin. c. 16.

Cic. 4. Tuscul.

Livius Dec.

1. l. 1.

Plutarch. in

Numa.

condemned this opinion : are not twelve more then one ? and shall not the judgement of so many be preferred to one ? How many more can you picke out of the whole Colledge of Cardinals, that were of your opinion, beside *Cusanus*, who was knowne to be a man that affected singularitie ? But I think you looked through a multiplying glasse, when you concluded from the induction of five *Copernicits*, that there were more of his opinion, then all the rest put together. Are you not like him who thought that all the ships and goods that came into the *Pyreum* were his owne ? And yet of these five which you mutter up for your defence, there was one, even the chiefeft, and of longest experience, to wit, *Galileus*, who fell off from you ; being both ashamed, and sorry that he had been so long bewitched with so ridiculous an opinion ; which was proved to him both by Cardinall *Bellarmino*, and by other grave and learned men ; that it was contrary both to Scripture, Divinitie, and Philosophie : therefore *Galileus* on his knees did abjure, execrate, and detest, both by word and writ, his error which you maintaine ; and promised with his hand on the holy Evangel, never to maintaine it againe : the other five, are men of no great note, except in your Bookes.

Mercure
Francois
An. 1633.

8. You advise us out of Aristotle and Ptolemy, to speake that which is most likely ; to entertaine that which is most agreeable to reason ; to frame such suppositions of Heaven as be most simple : and you tell us that Rheticus and Keplar wish that Aristotle were alive againe. But your advice is superfluous, and their wish is ridiculous : for we speake and intertain that which is most reasonable ; if we do not, prove it, that we may amend our error. Our suppositions of Heaven are not so simple as could be wished ; but we were better content our selves with them, then move the earth with you : for that is, *ex fumo in flammam*, to leap out of the frying-pan into the fire. Now to wish *Aristotle* alive, or to thinke that he or *Clavius* would ever be of your opinion, are meere dreames and phansies. And though *Clavius* had found that *Ptolomies Hypotheses* had not beene so exact as should be ; yet he would not have beene so mad, as to beleieve the Earths motion, and the Suns rest. And though some have fallen off from *Aristotles* and *Ptolomies* opinion, to *Copernicus*, that will but little help your cause : for in all professions there have ever been some unconstant and giddy-headed men ; many have fallen off from Christianity to Mahumetisme ; from Calvinisme to Anabaptisme ; will you condemne therefore their former professions ?

so some have revolted from *Copernicus* to *Ptolomie*. You challenge then too great a priviledge, when you say that none who having bin once settled with any strong assent on your side, that have afterwards revolted from it : besides that it is false, there was never any profession that could brag of such a priviledge : not Christianity the best of all professions. And though some men reject that opinion in which they were nursed, and have approved for truth, and now embrace your absurd Paradox, which is condemned in the Schooles ; yet it will not follow that yours is the righter side : for will you say that because many Christians become Turks and Jews ; many Orthodox men have become Arians, Nestorians, Eutychians, Macedonians ; that therefore these Heretickes were in the right ? There are too many wavering Spirits shaken like reeds, and carried about like clouds with every winde of doctrine, unsetled and in-
stable in all their wayes.

You tell us, that most of those opposers of your opinion, have been stirred thereunto, either by a partiall conceit of their owne inventions, for every one is affected to his owne brood : or by a servile feare, in derogating from the ancients authoritie ; or opposing of Scripture Phrases ; or by judging of things by sense rather then by reason. *Ans.* The first of these reasons will be retorted upon your selfe ; for the partiall conceit of your owne inventions, and the affection you carry to your own brood, have made you fall off from that ancient and universall truth, to embrace an error : and this was it that moved *Copernicus* to oppose *Ptolomie*, *Alphonfus*, and the other famous Astronomers. Therefore, *Tycho* did not oppose *Copernicus* to make way for his owne Hypothesis as you say, but to maintaine that truth which had so long continued in the world. As for your second reason, I answer, that we should not without extraordinary and urgent cause, derogate from the authority of the ancients ; much lesse, from the meaning of Scripture phrase ; which the Church of God from the beginning hitherto hath delivered to us : neither doe we adhere to the meaning of Scripture phrase, out of a superstitious feare of the supposed infallible Church, as you say ; but out of a filiall feare to the true Church, our Mother, the ground and pillar of truth : If wee heare not the voice of this Mother, we cannot have God for our Father. A wise son honoureth his father, but he is a foole that will despise his mother. Why should we thinke that you or *Copernicus* can better understand the Scripture phrase, then the Church of God from time to time hath done ? this was the proud conceit
of

of *Nestorius*, that he onely understood the Scripture phrase, as *Vincentius* complaines of him. That which you call the new Creed of *Pius* the Fourth, that no man should assent unto any interpretation of Scripture, which is not approved by the ancient Fathers; is indeed the old Creed of the Church, as *Vincentius* sheweth: let us
Vincent. Lyr. aduer. Hæres.
Vincent. ibid.
no wayes no wayes (saith he) depart from that sense which our holy Fathers and predecessours have maintained. And againe, whatsoever (saith he) the Catholique Church hath of old retained, that onely shall a true Catholique maintaine and beleve: therefore he shewes that it is the trick of Heretickes to delight in novelties; and to reject and despise old doctrines. *Ut profanis novitatibus gaudeant, antiquitatis scita fastidiant.* If then the Jesuites, in reverence to the Churches authority, and to the ancient Fathers doe oppose this opinion, they deserve commendation: and so did these Cardinals that called it in, and punished the defenders of it. Thirdly, you say that we judge of things by sense, rather then by reason; but indeed you have no reason to say so: for although that sensitive things, such as the Earths stability, and Sunnes motion, are to be judged by sense; yet we have many reasons for us, whereby we judge it must be so as I have shewed heretofore. But I confesse we judge not by your reasons, because they are but shadowes of reason, and no way satisfactory: neither doe we so tie the meaning of Scripture to the letter of it (as you say,) but that we give freedom to raise other senses, whether allegoricall, tropologicall, or anagogicall; so they be not repugnant to faith and good manners. But in historicall things, Saint *Austin* tells us, that we must chiefly adhere to the literall sense; and it is a Maxime in the Schooles, that we must not reject the literall sense, which is not contrary, *agendis aut credendis*,
Cont. Lantbergum.
L. 8. De Genes. ad lit. c. 1 & c. 2.
to the Creed or the Law: neither is it unlawfull to conclude Philosophicall points from the letter of Gods word, seeing there is but one truth in Divinitie and Philosophie. But to conclude Philosophicall points flat contrary to the letter of divine Scripture, as you doe, is too much boldnesse: therefore, I will speake to you in the words of Saint *Austin*, writing of the Philosophers of his time; *L. 1. De Genes. ad liter. c. 21.*
Quicquid de tuis voluminibus his nostris literis contrarium protuleris, aut aliqua facultate ostendamus, aut nulla dubitatione credamus esse falsissimum. Your assertion of the Earths motion, is contrary to the letter of the Scripture; therefore we doubt not to say, is it most false. As for our ignorance of your Astronomicall grounds, it is excusable, seeing your owne ignorance is the cause of it: how can the

Scholar know; if the Master be ignorant himselfe of these Principles which he undertakes to teach; or knowes not which way to make them intelligible? How can the blinde lead the blinde? *Non obusa adeo gestamus pectora.* We are not so dull but we can understand other Principles: but yours being *Chimara's*, fictions, non entities; having no other ground but your owne phansie, cannot informe our understandings which have entities for their objects.

9. *No counsell hitherto (say you) have censured this opinion for an Heresie.* *Ans.* The Church by her counsell doth not presently censure Heresies; she knowes best her owne times and seasons, and reasons too. The Physician doth not alwayes in the beginning of a disease, prescribe purging physicke. 2. From the Churches forbearance to censure an Heresie, you must not conclude the nullitie of an Heresie: for the Heresies of *Arius*, *Macedonius*, *Eutyches*, and *Nestorius*, were Heresies, before they were censured by the four generall Councils. And the Church, saith Saint *Austin*, suffers and beares with many Heretickes, so long as they doe not pertinaciously maintaine, nor maliciously (to the disturbance of the Church) spread abroad their falshoods; *Quod si fecerint, vano pollantur.* Many are Heretickes *in foro Cæli*, which are not *in foro Ecclesiæ*: and he is not onely an Hereticke which denieth an Article of the Creed, but he also that gain-sayeth any plaine place of Scripture. The broadcaster or maintainer of any false and new opinion, is an Hereticke. 3. Either you have not read, or have not observed the censure of *Galilæus* opinion by the counsell of Cardinals; who not onely call it a false opinion, erroneous in the faith, a doctrine contrary to the holy Scripture: but also in plaine tearmes they call it Heresie. 4. When you say that *Fromundus* calls it a rash opinion, bordering upon Heresie, that *Paul* the Third was not so much offended at *Copernicus*, when he dedicated his booke to him; that the Fathers of *Trent* call Epycles and Eccentrickes, but fictions: these are such weake helps to support your cause, that if you leane on them, they will prove no stronger then reeds or cob-webs: if I should insist on them, I should but discover your weaknesse, in alledging of them. And likewise, your instancing of *Shonbergius*, who importunately begged the Commentaries of *Copernicus*: was it not rather out of curiosity to see how he could defend such an absurd Paradox, then out of true affection to embrace it? So *Harad* desired to see Christ; I doubt not but many will desire to see your booke of this subject, which (I dare presume) will never be of your

Lib. quest. E.
vang. in Mat.
4. 12.

Lib. de milit.
sedend. c. 1.

Le Mercure
Franc. an.
1633.

your opinion. Lastly, where as you say, *It is absurd not to assent to any thing in naturall questions, but what authority shall allow of.* I say, it were both absurd and dangerous for mens soules, and the peace of the Church, if men were suffered to assent to any absurditie, against Scripture, sense, reason, and the Churches authority.

CHAP. II.

1. *Wee must beleve the Scripture, not our own phantasies.* 2. *The Scripture never patronizeth a lye or an error, nor doth it apply it self to our capacity in naturall things, though it doth in supernaturall mysteries.* 3. *Wee must stick to the literall sense, when the Scripture speaks of naturall things.* 4. *Some particular Scriptures vindicated from our adversaries false glosses: as namely, Psal. 19. of the Suns motion like a Gyant and Bridegroom, to the ends of heaven: And of his heat, Eccles. 1. Of the Suns rising and setting. Joh. 12. Of the Sunne standing still, of the mid^d of heaven; how over Gibeon, and how no day like that. Esay 38. Of the Sunnes returning teane degrees; of the greatnesse and meaning of this miracle: whether knowne to the Gentiles. The testimony of Herodotus concerning this.*

IT were happy for us (say you) if we could exempt Scripture from Philosophicall controversies. And I say, It were happy for us, if all Philosophicall controversies could be decided by Scripture; or if men would be so modest, as to rest contented with Scripture phrases, and expressions of such Philosophicall points, as are mentioned there: But what hope is there to end controversies, when many are so wedded to their own phantasies, that neither will they yeeld to Scripture, except they may have leave to interpret them; nor to reasons, except they may have leave to forme them; nor will they trust their own senses, but will captivate and enslave them also to their groundlesse imaginations? The Scripture tells us in plaine tearmes, the Earth is inmoveable: our senses doe assure us, and many reasons which I have heretofore alledged, induce us to beleve the truth of this assertion: and yet you spurning at Scripture, sense, and reason, as if your phantie were *instar omnium*, would have our judgements, senses, Scripture, Church, and all regulated by your absurd dictates; therefore it is an unreasonable thing in you, to desire that the holy Ghost should not be Judge of his owne assertions in naturall truths; and that there should be more credit given to your conceits, (which you call industry and experience) then to Gods own words. Indeed this travell hath God left to the sonnes of men, to be exercised with, as a punishment for their sins; to toile and labour all their dayes about shadowes, imaginations, and indeed meer nothing; groping at the doore of knowledge (like blinde Sodomites)

all their dayes, and cannot finde it; so that they who have spent their whole life in Astronomie, may with Saint Peter, say on their death bed; *Master. We have laboured all night, but have caught nothing.* Thus with *Martha*, they are busie about many things, and neglect that one thing which is onely necessary.

2. It is but a conceit of yours to say, *That the Scripture accommodates it selfe to the vulgars conceit. in saying, the Sunne riseth and falleth, &c.* I warrant you, if the vulgar should conceive that the heavens were made of water, as the *Gnosticks* held; or that the Sunne and Moone were two ships, with the *Manichees*; or that the world was made of the sweat of the *Eones*, with the *Valentinians*: or whatsoever other absurd opinion they should hold, you would make the Scripture say so, and to accommodate it selfe to their conceits. The stability of the Earth, and motion of the Heaven, are absurd and false opinions in your conceit; and yet the Scripture affirms them. You are as unapt I know to beleieve that the Sunne moves, as others are that it stands still; therefore it's a wonder you do not begin to call the Scripture authority in question, that affirms the Sun's motion: seeing you say men would be apt to doe so, if the Scripture had said, the Sunne standeth, &c. How shall the Scripture please both parties? if it say the Sun moveth, your side will except against it: if it say the Sun standeth, ours will be offended at it. Why should the Scripture be more loath to offend us then you, except it be because we are the stronger side; and we have our senses to witnesse with us, which you have not? I wish you would conceive a more reverend opinion of the Spirit of truth, who cannot lie; nor will affirme a falshood upon any pretence whatsoever; neither will he countenance a lie, to confirme a truth; or speake false in one thing, that wee may conceive his meaning the better in another thing. He needs not such weake and wicked helps as falshoods, to make us understand his will; his word is strong and mighty in operation; it's the power of God unto salvation; a sharp two edged sword; his hammer, his scepter, &c. As it stands not with his truth to affirme a lie, so doth it no wayes consist with the power of his Word and Spirit, to helpe our understanding by a lie.

3. You say, *That if the Scripture had said, the Earth riseth and setteth, and the Sunne stands still; the people being unacquainted with that secret, would not have understood the meaning of it.* Answ. What matter is it whether they had understood it or not? For you tell

us that these things are not necessary in themselves; and that it is besides the scope of these places, to instruct us in Philosophicall points. Will you have the holy Ghost then speake a falsehood? for feare lest we should not understand the meaning of a secret, which is not necessary for us to know: if it be not needfull for us to know whether the Earth stands or not; so it was lesse needfull for the Scripture to say the Earth standeth, when it doth not stand. But you doe well to call the motion of the Earth a secret, for so it is a great secret, hid from the wise and prudent of this world, and revealed onely to such babes as your selfe. But why is this a secret? If it be a naturall effect, it is no secret; for though naturall causes doe not incurre into our senses, yet the effects doe; and if this be a secret effect and not sensible, it cannot be an effect of nature; but I thinke it be such another secret as the Philosophers stone, which never was, and never shall be.

Though it be beside the chiefe scope of Scripture to instruct us in Philosophicall points: yet it will not follow, that these Philosophicall tearmes are to be otherwise understood, then as they are expressed. There be many Geographicall, Historicall, and Chronologicall passages in Scripture, mentioned incidently, and not chiefly to instruct us in such points: shall we therefore understand them otherwise then they are set downe, or rather the cleane contrary way? But when you say the Earths motion is beyond our reach; I grant it: because we cannot reach that which is not made manifest to us, either by sense or reason, or divine authority; If you can either of these wayes make it appeare, I doubt not but our understanding will reach it: and if you cannot one of these wayes make it appear to us, we will account it a meere nothing. For *idem est non esse, & non videri*: and indeed you say well out of the Glosse, that God doth not teach curiosities which are not apprehended easily; for your motion of the Earth is an incomprehensible curiosity. And it is well said by you againe; that the Scriptures authority might be questioned, if it did teach naturall things contrary to our senses; and therefore if any booke of Scripture should affirme, as you doe; that the earth moves naturally and circularly, I should verily belevee that that booke had never been indicted by the holy Spirit, but rather by a Pythagorean spirit, or by the spirit of Dutch beer.

You condemne Tertullians Heretickes for reaching Scripture a wrong way, and forcing it to some other sense agreeable to their false imagination; and rather then they would forgoe their tenents, yielded the Scripture to be

In Gen. ad
litteram.

erroneous. De te fabula narratur. You retch the Scripture a wrong way, forcing it to your false imaginations; you do not indeed call the Scripture erroneous, but you make it to speake one thing, and meane the cleane contrary; therefore, you shall doe well to apply Saint *Austins* counsell to your selfe, and doe not settle your opinion rashly on that darke and obscure conceit of the Earths motion. It is true also what you alledge out of Saint *Austin*, that the holy Ghost being to deliver more necessary truths, left out to speake of the forme or figure of Heaven, &c. because hee would not have us spend too much time in these things, and neglect the meanes of salvation; but you should have done well to have subjoined the following words of that same Father, to wit; *That is true which is affirmed by divine authority, rather then that which is guessed at by humane infirmity.* For there he speakes of Philosophicall points, which seeme to be contrary to Scripture: but you are mistaken when you say, *that God descends to our capacity in naturall things; and conformes his expressions to the mistake of our judgements, as he doth apply himselfe to our apprehensions, by being represented like a man.* There is infinite oddes betweene God and naturall things; wee that are corporall cannot understand spirituall things, much lesse that infinite Spirit, but by familiar expressions; yet such as doe in some sort represent his attributes to us: as he is said to have eyes, hands, &c. by which are signified his knowledge, operations, &c. But for naturall things there was no such necessity, because naturall men, by natures light are able to understand naturall things: so wee know what a circular motion is; and if the Earth did truely move, we should as soon apprehend the motion of it, as we do the Suns motion: therefore, there was no need why God should descend to our capacity in affirming an untruth, because wee cannot understand the Earths motion. God then doth not conforme his expressions to the error of our judgements; for our judgements doe not erre in this; but he speakes according to the truth of the thing, which wee judge and apprehend as it is. We apprehend the fire to be hot; if you were of an opinion that it were cold, (which you may as well maintaine as the Earths motion) you would doubtlesse tell us, that the Scripture in saying the fire is hot, applies it selfe to the vulgar error or mistake of our judgements; thus you may make the Scripture to serve you for defence of any absurdity, by using such a subterfuge, and running into such a starting hole.

4. You examine those particular Scriptures which are urged to prove the

the *Suns* motion, and you tell us that they are spoken in reference to the appearance of things, and the false opinions of the vulgar; and in the 75. pag. of your Booke, you say it is a frequent custome for the holy Ghost to speake of naturall things, rather according to appearance and common opinion, then the truth it selfe. I would know if this consequence be Logicke; the holy Ghost speakes of naturall things according to appearance, frequently, and of some, *ergo* continually, and of all; or particularly of this; to wit, the Earths immobility. The Scripture oftentimes speakes of God according to mens opinion and capacity; as, that he is angry, that he repents, &c. *Ergo*, the Scripture speaks still of God thus: and so, when the Scripture sayes, that God is a Spirit, or just, or infinite, or eternall; that may be understood (if your Logicke be good) according to opinion or appearance; this will prove a dangerous kind of reasoning. 2. Why doth not the holy Ghost tell us in plaine tearmes, that the Earth moves, if it doth move? what end hath hee to tell us that it is immoveable? Is it because we are not capable to understand such a high mysterie? that is ridiculous. For is it a greater mysterie then Christs Incarnation, Resurrection, Ascension, &c. which are set downe in plaine tearms? but indeed it is no mysterie; it's easie to understand the Earths motion, if it did move. Or is it because the holy Ghost would not give offence to the world, in telling them plainly that the Earth moved, being an opinion so repugnant to sense and reason? Then doubtlesse he would not have told us, that the Sun and Moone stood still at *Joshua's* command; or that the Sea was divided by *Moses* Rod; and those other miracles of holy Writ, as much repugnant to sense and naturall reason, as the Earths motion is: the holy Ghost useth not to hide or mince the truth, for feare of offending men. 3. There is great oddes betweene asseverations and allusions; betweene the affirmation of a truth, and an allusion to a fiction. The Scripture speaking of perverse men that will not heare Gods word, alludes to the fiction (as you call it,) of the adder stopping his eare; *ergo*, when the Scripture speakes of the Earths immobility, it speaks according to common opinion. A goodly consequence; as if you would say, the Scripture speakes figuratively of Christ, when it calls him a Lamb, a Doore, a Vine: *ergo*, when the Scripture speakes of the beheading of *John Baptist*, it speaks according to common opinion: if there be no better Logicke taught in the Universities of the Moone, we will never send our Sons thither. 3. It is a rule in Saint *Austin*, that we should expound Scripture as

De verbis
Domini, Ser.
18.

the Saints have expounded it before us ; *Quomodo hac verba intellexerunt Sancti, sic utique intelligenda sunt* : But name me that Saint that ever expounded these Scriptures, which speake of the Heavens motion, and of the Earths immobilitie, according to appearance and common opinion. Of St. *Austins* minde was the sixth generall Councell, prohibiting any man to interpret Scripture, otherwise then the Lights and Doctors of the Church, have hitherto expounded them by their writings ; which Canon is confirmed in the eleventh Session of the third Lateran Councell. 5. The ancient Fathers warne us, that we doe not deviate or depart from the literall sense of Scripture, so long as no absurdity doth follow thereupon : now, no absurdity doth follow upon the literall sense of the Earths immobilitie ; but upon your sense and exposition many absurdities follow ; therefore we must not depart from the literall sense. 6. Where the holy Ghost speakes obscurely and figuratively in one place, hee doth in another place open himselfe in plaine tearmes, as Saint *Hierome* observes : but speaking of the Earths immobilitie, he useth still the same phrases ; neither doth he explaine himselfe otherwise in any one place ; which doubtlesse hee would have done, if he had meant otherwise then hee spoake. 7. I absolutely deny that the holy Ghost speakes of naturall things, otherwise then in truth and reality ; and not (as you say,) according to common opinions. As for your expositions of these Scriptures which are for us, and your instances against our opinion ; they are wrested, and false, and impertinent, and of no soliditie, as we will shew by our answer or reply to each of them severally.

In Isai. c. 19.

Psal. 19.

1. It is usuall with you to cut your throate with your owne sword, and to bring passages against your selfe ; for you would prove that the Scripture speakes of the Heavens motion, in reference onely to the Vulgars false opinion ; because, *The Sunne is in his glory like a Bridegroom* ; and in his motion like a Gyant. I answer, if the Sunne be in his motion like a Gyant, then sure the Sunne hath motion ; for how can that which is not, be compared to that which is ? Similitudes cannot illustrate non entities. 2. If the Sun were not a glorious creature, *David* had not compared his glory to the glory of a Bridegroom ; so consequently, if the Sun had beene without motion, he had not compared his motion, to the motion of a Gyant ; if there be no motion in the winde and thunder, it had been idle to give wings to the one, or arrowes to the other, as *David* doth. 3. Will you make the Scripture not onely assever a falshood

fallhood in positive tearmes, but also bring similitudes to illustrate it? this is to make the holy Ghost a cherisher, fomentor, and maintainer of untruths; for so it must be, if the Sunne move not, the Scripture shewing it doth move, and declaring by similies how it doth move. 4. What consequence is this? The Scripture compareth the Sun to a Bridegroom, and a Gyant; *ergo*, the Scripture speaking of the Suns motion, speakes in reference to the false opinion of the Vulgar? it is all one with this: The Gospel compares Christ to a Bridegroom; *ergo*, the Gospel speaking of Christs humanity, speakes in reference to the false opinion of the Vulgar. 5. There is ods between positive speeches and comparifons; the Sun is never called a Bridegroom in Scripture, but is said to be like a Bridegroom: *Simile non est idem*. But in Scripture still, the Sun is said to move, and the earth to be stable, in positive tearmes. 6. That *David* in this comparifon did allude to the phansie of ignorant people, supposing the Sun by night to rest in a chamber, is but your groundlesse conceit: you might say rather that he alluded to the fiction of Poets, describing *Aurora* to go to bed every night with *Typhonus*; *Typhoni croceum linquens Aurora cubile*: or to that golden bed which *Vulcan* made him; in which he is carried through the Sea. *Τὸν μὲν γὰρ διὰ κῦμα φέρεי πολυήρατος ἐννύχια*. But neither to this pleasant bed, nor to that of *Typhonus*, nor to the Vulgar conceit doth *David* allude; but simply sets out Gods Majesty in the glory of the Sunne, by a familiar example, taken from the glory of a Bridegroom coming out of his chamber. 7. This former part of the Psalm is interpreted by the Fathers mystically of Christ, whose motion and alacrity to run his race from the wombe to the grave, from heaven to earth, and from earth to heaven; I hope you will not say, are to be understood in reference to the false opinion of the Vulgar. 8. He is not compared to a Gyant, in respect of his bignesse in the morning, (as you say) no more then he is to a dwarfe, in respect of his littlenesse at noone; but in respect of the indefatigable swiftnesse of his motion, he is compared to a mighty runner: for there is no mention made of a Gyant in the Hebrew text, neither was it fit to compare him to a Gyant. 9. Nor doth *David* allude to the Vulgar opinion, when he speakes of the ends of Heaven; for in a round globe or circle there are no ends: but he speaks with relation to the Hemisphere, which you must needs yeeld hath ends; for it terminates and ends in the Horizon, called therefore Finitor. Besides, in the Hebrew, Greeke, and Latine texts, it is not said, the

ends; but the remotest parts of Heaven: and so you cannot deny but some parts are remoter from us then other parts. 10. Neither hath the Scripture any reference to the common mistake, as if the Sun were actually hot, when it saith, (*nothing is hid from the beate thereof:*) these Philosophers who deny any actuall heat in the Sun, yet say the Sun is hot: and I doubt not but you have said so many a time, and yet you have no reference to any actuall heate in the Sun. Do not you use to call cinnamon-water, and such like distilled waters, hot waters? and yet they are actually cold. Philosophers tell us that *Saturne* is cold, and yet they doe not thinke that he is the subject of cold, but the cause onely. The Scripture saith, *That none can avoid the anger of God*; and yet you will not say that this passion is in God. The Sunne then is hot, not by any heate in him, but by calefaction from him.

Eccles. 1.

2. When the Scripture saith, *The Sunne riseth and goeth downe*; this is not spoken in relation to the circumference which is equally distant from the Center; but in reference to the Horizon as you confesse, or rather to the scituation of Judea; and so of other Countreys: and in this respect, the Sunne doth not onely seeme, but doth in very deed rise and fall to the Inhabitants. For doth not the Sunne truely ascend when he comes to your meridian, and truely descend, when he removes from it? Doth he not truly ascend and descend, to those who have him for their Zenith in their meridian? Astronomers tell us that there is a true and reall rising and falling of the Starres, as well as an apparent; and then are they not truely said to rise and fall, when they doe truely ascend above, and descend beneath the Horizon? If the Sunne doth not truely ascend and descend, then the shadowes doe not truly increase and decrease; and so our Sun-dialls doe not truely shew us the hours of the day, but in shew onely, and in appearance; but wee see that the shadow still decreaseth, as the luminous body ascendeth, and encreaseth as that descendeth. *Virgils Tytus* can tell you so much:

Majoresque cadunt aliis de montibus umbræ,

Et Sol discedens crescentes duplicat umbras.

Josh. 12. 14.

3. *Joshua* saith, *That the Sunne stood still in the midst of heaven*: Now, *Heaven* (you say) hath no midst but the Center, and so this is also spoken in reference to the *Vulgar opinion*. Answ. By the Center, either you must understand the Earth, or the Sunne; the Earth indeed is in the midst of the world, but not in the midst of Heaven; for it is not there at all: if it were, Christ needed not to ascend to Heaven, being

being in the midst of it, when he was on the earth. Wicked men then would have the best of it; for as they have the largest possessions on earth, so should they have the largest shares in heaven. If by the Center you meane the Sunne, then you speake in reference to the Vulgar opinion; for the Center is in the midst of Heaven, the Sunne is the Center; therefore the Sun is in the midst of Heaven, and so *Joshua* saith. 2. By the Heaven he doth not understand the whole celestially Globe, but the Hemisphere; and so this having its Horizon or outmost limits and extreames, must also have its middle: and what can that else be, but the Meridian passing through the Zenith? Thus then it is demonstrable that whatsoever is equally distant from the extreames is in the midsts; but the Sun being in the Zenith or Meridian, is equally distant from the extreames: therefore the Sun being in the Zenith, is in the midst of Heaven. 3. The Hebrew Doctors tell us, that when the Sun stood still, hee was then in the Summers solstice; being the Tropicke of *Cancer*; from which Judea is not farre distant: and so in that regard also *Joshua* might truly say, that the Sunne was in the midst of Heaven, being then over their heads. 4. If it be a vulgar opinion to say, that the Sunne is in the midst of Heaven; then all the chiefe learned both in Divinitie, Philosophie; and Poetrie, speake as the Vulgar doe; for they use the same phrase: hence came the word Meridian, *Meridies*, Mid-day, Mid-night. If the Sunne were not every day in the midst of Heaven; how should the Artificiall day be divided into equall parts? Therefore *Clavius* tells us, that the Meridian is called by Astronomers, the midst of Heaven; the line of the midst of Heaven, &c. And the Prince of Poets speakes both of the Sunne and Moone in the midst of Heaven:

Jam medium Phœbus conscenderat igneus orbem.

Phœbe ———

Noctivago currum medium pulsabat Olympum.

Gr. 4.

Ant. 10.

5. I would know of you if all Vulgar opinions be false. That (I hope) you will not say: If then the Vulgar speake sometime truth, why may not the Scripture speake truth with the Vulgar? or why should truth be of lesse esteeme, because vulgar? it should be otherwise, for, *Bonum quo communius eo melius.*

It is ridiculous to think with you, that the Sun was over Gibeon only in appearance and vulgar conceit: For indeed the Sun was truly over Gibeon, although he was no more over that then over other places. Suppose you were in *Pauls Church*, and divers others were there too;

is the rooffe of that Church over your head only in appearance and vulgar conceit, because it is over other heads as well as yours; or because it is much larger then your head? Or must that phraſe be thought improper, the rooffe is over your head? 2. The figure Eclipſis is frequent in Scripture, when there ſome words wanting in a phraſe which are to be ſupplied: as, 2 Sam. 6. 6. *Uzza put forth to the Arke,* is underſtood, *his hand.* So 2 Chro. 10. 11. *I with Scorpions,* is underſtood, *will chaſtiſe you.* So here, *Sun ſtand ſtill in Gibeon,* is underſtood, *while we are fighting?* and ſo the words muſt be rendred: *Stand ſtill whileſt we are fighting in Gibeon;* for not onely the city, but its territories where *Joſhua's* army was, are called by the ſame name. So, *Moon in the valley of Ajalon,* is underſtood, *goe not downe.*

Theſe words, (*There was no day like that before it, or after it*) you ſay, *are not to be underſtood abſolutely, but in reſpect of the vulgar opinion; becauſe there be longer dayes under the Pole.* Anſw. *Joſhua* ſpoke not this with any reference to vulgar opinions, but to the Climate in which he lived, and where the miracle was ſhewed; it was the longeſt day that ever was in thoſe parts; and what reaſon had he to except the dayes under the Poles, being nothing to his purpoſe? When Chriſt ſaith, *There be twelve houres in the day,* his words cannot be underſtood abſolutely; for there be more houres where the Horizon hath any obliquity; and the higher the Pole is elevated above the Horizon, the more houres have the dayes in Summer; yet his words are true, *in ſphæra recta,* and in thoſe Countreys that are under and neerer the Line. And what will you conclude from this? that becauſe theſe and ſuch like phraſes, are not to be underſtood abſolutely; therefore this phraſe (the Sun moves,) is not to be underſtood abſolutely? But I will reply. Theſe phraſes are true in reſpect of the Climate they were ſpoken of; *ergo,* this phraſe alſo, (the Sun moves) is true, in regard of the Climate it is ſpoken of. If then Judea be the place where the Earth is ſtable, and the Sun moves, your opinion is quite overthrowen by the force of your own inſtance: for if the Earth be immoveable in any Climate, and the Sun moveable, we have that which we deſire: it lieth on you to ſhew how, and why the Sun ſhould move there, and not elſewhere; why and how the earth moves here and not there. 2. Theſe words of *Joſhua's*, perhaps have no reference to the length of the day, although the vulgar Tranſlation read it ſo; but rather to the greatneſſe of the miracle, the Heavens hearkening to the voyce of a mortal man. *Joſhua* acknowledgeth, *That never any ſuch day was before.*

or since, that the Lord hearkned to the voyce of a man : For so the Hebrew 38.8.
brew and Greeke read it.

4. The Scripture saith, *That the Sun returned ten degrees in the dyall of Achaz*; this you will have to be understood of the shadow only : So I perceive the Sun and the shadow, light and darknesse, is all one with you. Take heed of the woe denounced; against them that call light darknesse, and darknesse light : Why may you not in other places, aswell as in this, by the Sun understand the shadow : as, *At Joshua's command the Sun stood still*; that is, the shadow stood. *Wee shall shine as the Sun*, that is, wee shall be dark as the shadow? 11.
2. You mince the miracle, and the power of God too much; for, is it not as easie for him to make the Sun goe back, as to make the shadow returne? Wherein is his absolute Sovereignty seene, and his transcendent puissance, but in the obedience of all creatures, even of the Sun, Moon, and Stars, to his commands? St. Austin, disputing against the Gentiles, sheweth them, *That Nature is not the supreme governor of all things*; and hee instanceth in the standing, and going back of the Sun. His Argument had bin of no force, had not the Sun moved at all, as you think. 3. If the shadow moved onely without the Sun, then either that shadow moved it self, which is ridiculous to think; or it was moved by the motion of the dyall, or of the gnomon and index of the dyall: Now, if the dyall or gnomon was moved by God or an Angel, tell us where you read it. Why might it not as well be turned about with a mans hand, or by some engine, and so this would have bin a suspected miracle; or else the shadow returned according to the motion of some other luminous body, & so this were to multiply miracles needlesly; for 1. that light must be created for that purpose. 2. It must have a particular motion of its own. 3. It must be a greater light then that of the Sunne, otherwise the shadow had not bene discernible. 4. It must either be united to some other light, or else vanish; all which was needlesse: is it not safer then to adhere to Gods word? from which when we wander, we fall into many by-ways. And whereas you tell us, *That the miracle is proposed onely concerning the shadow*: I answer, we are not to consider so much what is proposed, as what was effected. God useth to effect more, then he proposeth, and to performe more then he promiseth. 2. You say, *There would have been some intimation of the extraordinary length of the day, as it is in that of Joshua*: I answer, there was no such reason, why the length of this day should be mentioned; because this day was much shorter then Joshua's, in respect it fell out in the

De Civit. lib.
21.c.8.

*Vide in Jo-
suam Mun-
stev. Lyram,
&c.*

the winter solstice ; whereas that of *Joshua* was in the summer solstice, as the Hebrew Doctors observe. 3. Had the Sunne returned, *This had been* (you say) *a greater miracle then those which were done on more solemne occasions.* *Ans.* God regards not the solemnity of occasions, in shewing of his miracles ; if he had, Christ had never wrought his miracles in obscure and remote places, as hills and deserts : He would rather have shewed his transfiguration in Jerusalem, to all the world, then upon Mount Tabor, onely to three Disciples. He useth his miracles, as he did the loaves ; he bestowed seven loaves on foure thousand men, and but five loaves upon five thousand : on small occasions God sometimes produceth great miracles, and upon great occasions sometimes hee sheweth none. 2. We must looke rather to the fitnessse of the miracle, then to the solemnity of the occasion : the Sunne represented the King, who was the life and glory of his kingdome. God would let him and all men see, that as he onely hath power to rule, and alter the course of the Sunne ; so it is he onely, that rules and turnes the hearts of Kings : the Sunne was obedient to Gods command, so should the King be. As the Sun moves to and fro, so doth the shadow ; and as the King is affected, so is the people. The going down of the Sunne bringeth sadnesse on the earth, so doth the death of a King. 3. The occasion of this miracle was not so small as you take it ; the sicknesse, prayers and teares of a good King ; the prayers of a great Prophet, the affection that God would shew his people, in delivering them from the hand of Assyria ; and the love that hee carried to such a King, that rather then his faith shall faile, the Sunne shall change his course ; and the lesson that he would teach us, that wee should honour Kings, whom God doth so much honour ; as to make the King of Planets stand still at the request of one, to goe backe at the petition of another : these I say were the occasions of this miracle. 4. The going backe of the Sunne is not a greater miracle (as you say) then his standing still ; for the standing of the Red-sea, was as great a miracle, as the going backe of Jordan. 5. The shadow in the historie of the Kings is onely mentioned, because the shadowes moving was more visible then the Suns. 6. *This signe* (you say) *appeared not in the Sunne, because the wonder was done in the land.* *Ans.* The signe was in the Sunne, and that the Babylonians saw ; they sent to know the wonder, that is, what strange effect it had done in the land of Judea. There be oftentimes strange Prodigies in the Aire, which cause strange effects on the Earth. If I should send to

Italie,

Italie or Germanie, to know of some strange Prodigies seene there in the Aire; and if I should enquire what wonder or effect these had wrought in the land, or in these countreys; would you conclude that there was no prodigious signe at all in the Aire? The Wisemen saw a new Starre, which shewed to them the miraculous birth of a new King; because they came to Judea, to see the wonder done in the land: you will therefore conclude, that there was no signe at all in the Heaven, neither Starre, nor motion of a Starre.

7. You doubt of the truth of the Sunnes going backe, because no mention of it in ancient Writers: But if you will doubt or deny all passages and miracles of Scripture, which are not mentioned by the Heathen writers, our Bible will be reduced to a small handfull: they mention not the standing of the Sunne, will you deny that too? But you reply, That they had some light of it, by alluding to it in the Fable of Phaeton, when the Sun was so irregular in his course, that he burned some part of the world: but indeed, this seems rather to allude to the Suns going backe, then to his standing; for an irregular course is more like a retrograde motion, then a standing still. But it is most likely that this Fable alludes to the conflagration of Sodome, and the other cities of the plaine: but however the Gentiles were not ignorant of this miracle, as may be seen by that message sent to Ezechias by the Babylonians, who were then the onely Astronomers. And Saint Austin proves, that this miracle was knowne to the Heathen, by that Verse in Virgil: *Sistere aquam fluvius, & vertere sidera retro:* 2 Chr. 32. 31

Ascribing both the standing of the Red-sea, and of Jordan; and the going backe of the Sunne, to Art, Magicke, which the Scripture attributes to the power of God. But Josephus in his first booke against Apion, will tell you the reasons, why the Gentile writers made little mention of the Jewish affairs and miracles; partly out of ignorance; as knowing little or nothing of the Jewes; because they were not a people given to travell, or merchandising, and dwelt not in maritime towns: and partly out of malice to that Nation, they concealed Gods love to them, and the wonders done amongst them; and indeed most of the ancient Records by injury of time, fury of fire and waters, and neglect of those that should have kept them are lost; both amongst the Gentiles and the Jewes, as those Bookes of the Kings of Judah and Israel, which are onely named in Scripture.

You reject the testimony of Herodotus concerning the returning

of the Sunne, (which he calls the rising of the Sun in the West;) because he exceeds in the computation of years: but by this means you will wrong all Historians, if you question the substance of the story for an error in the circumstance: an error in the computation of time takes not away the truth of the thing it selfe. The *China* people reckon an incredible number of yeares from the Creation of the world; yet you will not deny but that they had some knowledge of the Creation, and that their relation of it is true. The Chaldeans and Egyptians reckon 432. thousand yeares before the Flood; will you therefore say, they had no knowledge of the Flood? The Septuagints reckon from *Adam* to the Flood, 2262. yeares; whereas the Hebrews number onely 1656. yeares; and yet the Fathers reject not the Septuagints testimony concerning the Flood; but most of them also follow their supputation. And how doe you know but that *Herodotus* number of yeares may agree well enough with ours; seeing divers Countreys did reckon their years diversly. The Arcadian year consisted but of three moneths: the A-carnanian of fixe: the Roman at first but of tenne. The Egyptian year was various; for sometime it consisted of thirteen months, sometime but of foure, and sometime of three onely, and of two, and of one onely sometime. Therefore doubtlesse *Herodotus* years were either Arcadian, or Egyptian; and so compare them with our yeares, you will finde that there is no such oddes as you make: and that in speaking of the Sunnes retrogradation, he hath not reference to the times that never were. And whereas you say that this miracle hapned when *Hesiod* flourished, you faile in your Chronologie; for *Hesiod* was above a hundred yeares before this miracle was effected, if you will beleieve *Genebrard* and the other Chronologers.

Chron. l. i.

You are a wise Philosopher to tell us, that the shadow (as well as the heat and beames) is the effect of the Sunne. Can darknesse be the effect of light? a privation is a defect, not an effect: if the shadow were an effect at all, it should be the effect of the darke and condensate body, but not of the luminous. *Take heed that the light which is in you be not darknesse, for then how great will that darknesse be?*

C H A P. III.

1. The Scripture doth not speake according to vulgar opinion, when it calls the Moone a great light, for so it is. 2. Nor when it speakes of waters above the Heavens, for such there are. 3. Nor when it calls the Starres innumerable, for so they are. 4. Nor when it mentions the circumference of the brasen Sea to be thirty cubits, and the diame-

ter tenne, for so it was. why the lesser number is sometime omitted. 5. Nor in saying the earth is founded on the waters, which is true. 6. The right and left side of heaven how understood, and how the heaven is *ἐκλυον*, and of the Intelligences. 7. The Scripture speaketh properly in attributing understanding to the heart. The Galenists opinion discussed. 8. Of ova aspidum, and the Pipers egges, how understood. 9. The Aspe or Ad ler how hee stops his eare. 10. Of the North and South winde in Scripture. 11. The Sun shall be truly darkned, the Moon turned to blood, and the starres shall fall, &c. 12. Of the windes whence they come, &c. 13. The sea the onely cause of springs. 14. The thunder is truly Gods voice. 15. The 7. Stars.

IN this Proposition you goe about to shew us, *That the Scripture in naturall things conformes it selfe to our conceived errors, and that it speakes of things not as they are in themselves, but as they appeare.* And yet the testimony of *Vallesius* which you bring to help you, overthrowes you; for, *Whatsoever* (saith hee) *is in Scripture concerning Nature, is most true, as proceeding from the God of Nature, from whom nothing could be hid.* If the Scripture expressions of naturall things be most true, then they cannot agree with our erroneous conceits; for truth and error agree like light and darknesse: and you confesse your selfe that all naturall points in Scripture are certain and infallible; but in that sense (say you) wherein they were first intended, and that is the sense that you give; for you only are acquainted with the first intended sense of the holy Ghost, and so wee must take it upon your bare word that that onely is the true sense which your side delivereth: and I pray you what heresie may not be maintained by Scripture this way? for heretickes will also say, That all things in Scripture are true, certaine, and evident, in that sense which was at first intended; but when it comes to the point, it is the sense which they themselves have invented and obtruded.

*Proem. Phil-
los. sacr.*

The first instance which you bring for proof of your assertion, is from the Moon, which is called in Scripture, *One of the great lights*; and yet by infallible observation (say you) *may be proved to be lesse then any visible starre.* *Ansiv.* Other Astronomers will prove as strongly as you can, that *Mercury* is the least of all starres; shall wee beleve you, or them? 2. Though I should yeeld that the Moon were a small starre in bulk, will it follow that therefore it is a lesser light? Must the light be intended, as the body is extended? I have seen a fire yeeld lesse light then a candle; *Mercury*, which you say is bigger then the Moon, hath not the hundreth part of that light which is in the Moon: so that if *Mercury* and the Moon should change places, yet the light of the Moon would not ap-

peare much leffer, nor the light of *Mercury* much bigger: the eie which is the light of the body, is not the clearer becaufe the bigger; there is not so much light in an Oxe eie, as in an Eagle's: Divines hold, That the light which was created the first day, was no other then the light of the Sun diffused over the hemisphære; the whole hemisphære is much bigger, I hope, then the body of the Sun; and yet the world, I think, was not more enlightened the first day, then the fourth, when that diffused light was contracted and compacted in a narrower compasse. 3. To what end should there be so much light in each starre exceeding the light of the Moone? They received their light not for themselves, but for us; (except you will say there be innumerable worlds, which must be enlightened aswell as ours) but wee receive by many degrees more light from one halfe of the Moon, then wee doe from all the starres together. Surely God made nothing in vaine; but in vain hath the starres so much light, if man, for whom they were made, receive no sight nor benefit from this light. 4. Astronomicall positions concerning the magnitude and heighth of each starre, on which they ground their darke conjecture of light, are toyes and fictions of their owne heads: they make false Maximes, and on these they build confused Babels of their owne conceits: yeeld to them that they have the semidiameter of the earth, and then

Græculus esuriens ad Cælum iusseris ibit;

Every smatterer will exactly tell you the height and bignesse of each starre,

Hand secus ac si oculo rubricam dirigat uno.

5. I will tell you what St. *Austine* saith of this Question, and of *De Genes. ad* the Astronomers of his time: Let them (saith hee) talk of heaven, *liter. l. 2. cap.* who have but small interest in heaven; wee confidently beleieve that these lights are greater then others, which the Scripture commends to be such. Let them give us leave to trust our owne eyes; it is manifest that they give more light to the earth then all the rest do, &c. The Scripture then, and our owne senses assure us that these are the great lights. If you say that each starre is a bigger light in it selfe then the Moon, I will beleieve it when I see it; or have talked with one of your world in the Moon, who perhaps can informe us better, then any reason you can bring to evince us.

2. Wee grant that *Moses* tells us of waters above the firmament, but we deny that this is in reference to an erroneous conceit (as you say) but rather wee hold, That it is an erroneous conceit to forsake

take the true fountaines of knowledge, to digge crackt cisternes ; to preferre any opinion to the plaine text of Scripture. What a forced exposition is it, to call clouds and raine below in the aire, and which are oftentimes lower then the tops of hills, to call these I say, *waters above the heaven*, of which the Psalmist speaks ; where-
as these waters are so farre below the heaven ? And how can any conceive, that the second day there was raine below in the aire, and that God by the Firmament did separate that raine from the waters of the sea ? And though I should yeeld that the aire is called heaven som-time Synecdochically ; and that raine or clouds being in the aire, may be said to be in heaven : yet I cannot yeeld, that therefore they are above the heaven, for to be above, and to be in, differ much : therefore I hold with the ancient Doctors of the Church, That there be waters above the heaven, which is no more incredible (saith St. *Austine*) that there may be waters in the upper part of the great world, then that there may be waters in a mans head, which is the upper part of the little world. If wee look (saith St. *Ambrose*) 1. On the greatnesse and omnipotency of God in creating the world. 2. On his ordinary power in preserving the world, sustaining all things by the word of his might, by which he holds up the *sea* that it may not drown the low land. 3. On his miraculous power in causing the waters of the Red-sea to stand upon an heap, and *Jordan* to goe back : which miracle he made visible, that thou mayst beleieve these things which are invisible ; then why should wee doubt of these waters which be above the heavens ? If any aske mee what is the nature, use, or end of those waters, and how they are there ; St. *Austine* shall answer for me : *Quomodo, aut quales ibi aquae sint, &c.* how, or what kind of waters these be, is uncertain ; but that there be waters there wee doubt not, because greater is the authority of this Scripture, then the capacity of all humane wit.

Psal. 148.

De civitat. l.
11. cap. 34.

Hexam. l. 2.
cap. 3.

De Genes. ad
lit. l. 2. cap. 6.
Gen. 1. 5. 6.

3. When the Scripture speaks of innumerable starres, you say, *that is to be understood according to the vulgar opinion* : but I say, that it is the opinion of the best Learned, that they cannot be numbred, even *Clavius*, whom you cite for you, confesseth, That though Astronomers have reduced the most conspicuous starres to the number of 1022. yet that there are multitudes of starres, besides these, that cannot be told, *Hoc nunquam negabo*, (saith hee) I will never deny this : and hee saith also, That God so enlarged *Abraham's* sight, that hee made him see all the starres of heaven. If then you

Psal. 147. 4.
Jer. 35. 22.
Inc. 1. 1. 1. 1.

looke in a cleare winters night towards the North ; if you look on the milkie way , if you consider the Stars towards the South pole, *De civit. Dei* not discernable by us ; you must confesse that the Scripture speaks properly, and not according to vulgar opinion, when it saith, That *l. 16 c. 23.* the Starres are innumerable : therefore saith Saint *Austin*, Whosoever brags that he hath comprehended and set down the whole number of the Starres, as *Aratus* and *Eudoxus* did ; *Eos libri hujus contemnit autoritas* ; the authority of Scripture contemnes them. But when you tell us, That the *Israelites* did farre exceed the number of the Starres ; that is nothing to our purpose : besides wee can easily answer, that God did not compare *Abrahams* carnall seed to the Starres, but his spirituall seed. His carnall seed is compared to the sand and dust ; and so writes Saint *Austin*. Againe, when you have *August. ibid.* found out the true number of all the Starres, then tell us, whether they or *Abrahams* seed be greatest in number.

4. You prove that the holy Ghost speaks not exactly of naturall secrets ; for he sets not downe the exact measure or proportion of Solomons brazen sea. *Answ.* I had thought that a brazen vessell had been the worke of art, and not a secret of nature : that Geometricall proportions are secrets of nature, is a maxime onely in your Philosophie. 2. I had said that *Josephus* held this sea not to be perfectly round ; You reply, That then the disproportion will be greater, and that Scripture which calls it round, is to be beleevd before *Josephus*. I answer, that I alledged not *Josephus* to preferre him in my beliefe to the Scripture, but to shew that there could not be an exact proportion, betweene the diameter and the circumference , in a vessell not exactly round ; and yet the Scripture doth not say , it was exactly round, but onely round. Every thing that is called round is not of an exact round figure ; an egge is called round ; The Rainbow is said to be round about the Throne. And the hills to be round about Jerusalem. And children to sit round about the table &c. Which you will not say are to be understood of an exact round figure. But indeed I know not how to please you ; if I alledge Scripture, you answer, that Scripture speaks not exactly of naturall secrets ; that it accommodates it selfe to the errors of our conceits ; that it speaks according to the opinion of the vulgar, &c. If I alledge *Josephus* or any other Author, then you tell us, that Scripture is to be beleevd before *Josephus* ; so that you are more slippery then any eele. 3. I had said, that the Scripture for brevities sake in numbering, used onely to mention the greater number, and to omit the lesser ; as *Jacobs* family

Rev. 4.
Psal. 125.

mily were seaventy soules, which indeede were seaventy five; and many other such passages I alledged. You answer, that this confirms your Argument; *For the Scripture is so farre from speaking exactly of Philosophicall secrets, that in ordinary numbering, it doth conform to common custome.* *Ans.* 1. Shew us that this kinde of numbering, was the common custome. 2. Will it follow: The Scripture doth not exactly number, sometimes for brevities sake; *ergo*, it never speakes exactly of Philosophicall points? 3. If this consequence be good, then it will follow, that you never speake exactly of Philosophicall points: for you sometimes in mentioning of numbers, omit the lesser number; as when you say seaventy Interpreters, whereas there were seaventy two. Lastly, I answer, that there is great oddes betweene an historicall narration of the measure of a vessell, as it was taken by the work-men, who are not still exact Geometricians: and a plaine and constant affirmation of a Philosophicall truth. He that wrote the Bookes of the *Kings*, sets down the circumference of the brasen sea to be thirty cubites, and the diameter to bee ten; for so doubtlesse the measure was taken by the work-men: but when the Scripture saith, *The earth is immoveable*; it records this as a Philosophicall or Theological maxime; and not as an historicall passage. Concerning the ends and sides of the earth, and of heaven we will speake anon.

5. That the earth is founded on the waters, is not the opinion of common people, but rather the contrary; for they are led by sense as you use to say: and their sense shewes them, that the seas are above the earth; and reason will teach them, That a lighter body cannot be the foundation of a heavier. But you bring a ridiculous reason, why some thinke the earth to be upon the water: *Because when they have travelled as farre as they can, they are stopped by the sea*: By the same reason, if you were travelling and stopt by a river, or lake; you will conclude that the earth is upon that river or lake. But your opinion is true in some sense; for when we are stopt by the sea, lake or river, we get up into a boate or ship, and then indeed earth is above water: but I thinke you was asleep when this watrish reason dropt from your pen. I have already shewed how the earth is said to be upon the sea; that is, (by the Hebrew phrase which wants comparatives) that it is higher then the sea; and that it is in some parts of it above the seas, floods, and rivers, that are in the concavities of the earth.

6. You speake much of the right and left side of Heaven, and
dextro

Job 23.8,9

2.

3.

4.

5.

dextro Mercurio; you have conveyed a great part of your discourse out of *Clavius*, without acknowledgement: but *quorsum perditio hac*? This waste of words might have been better spared, as being impertinent. For that place of *Job* speaks indeed of the right and left side in heaven, nor needs there to be. For the left side is more imperfect and weak then the right, which cannot be said of heaven, being an uniforme, and every way perfect body. And how can there be a right and left side, where there is neither sense nor life, nor distinction of organically parts? Therefore, in trees and plants, there is no right or left side, though they have life; much lesse can this be in heaven. 2. Tell us what part of heaven doth the Scripture call right or left? this I know you cannot tell. 3. Though the Scripture should speak after the vulgar phrase, in naming the right and left side of heaven: doth it therefore follow, that the Scripture speaketh so concerning the stability of the earth? 4. Whereas you say, *That Aristotles opinion in this point is delivered upon wrong grounds, supposing the Orbes to be living creatures, and assisted with Intelligences*: I confesse that he calls the heaven *ἐμψυχον*, as having a soule or spirit, which he calls Intelligence, we Angel, by which the heaven is moved: but he doth not hereby suppose the heaven to be a living creature; for the Angels are not informing formes of their Orbes, but assisting. When the Angel was in the poole of Bethesda, and moved the water, you will not inferre upon this, that the poole was a living creature: whatsoever is *ἐμψυχον*, *animatum*, that is; hath a soule or spirit in it; is not therefore a living creature: for so you may say a paire of bellowses, or winde instruments of musicke, are living creatures; for winde, breath and aire, are called sometimes soules: *ψυχή* or *anima*, or *animus*, is common to them all. *Quicquid ignes, animaque valent: Phrygiæ audire animas*, are spoken of bellowses, and musically instruments; so, *Phrygius cornus liquida canit anima*: And yet I will not deny, but metonymically, heaven may be called a living creature; as being that which giveth life to living creatures: or by Analogie, it may be said to live, in respect of the Angel which supplies the roome of a soule, not in giving life, but, motion to it. 5. It was no wrong ground in *Aristotle* to say, that the heavens were assisted with Intelligences, seeing they cannot move themselves being simple substances; neither can a naturall forme give such multiplicities of motions, as are in the heavens; neither are they moved by other bodies; for these bodies

dies at last must be moved by spirits; neither doe naturall bodies move naturally in their place, but, to their place: now the heavens are in their place. Of this opinion were not onely the Philosophers, but also the Christian Doctors: heavenly bodies are moved by the ministry of Angels, saith Saint *Austin*. *Origen* saith, that the Angels have the charge of all things, of earth, and water, aire, and fire: and perhaps Saint *Hierome* mistooke his meaning, when he attributes to *Origen* this errour, of assisting reasonable soules to the heavens; he meant the Angels. And *Thomas*, by that Spirit, that compasseth the world by its motion, *Eccles.* 1. 6. understandeth an Angel. It were strange to thinke that so many Angels should be assigned by God for the earth; and for inferiour officers towards men, and none should have the moving of the heavens: but of the Angels moving their spheares, I have spoken already against Mr. Carpenter.

7. The Spirit (you say) applies himselfe to the common tenent generally received heretofore, in attributing wisdom and understanding to the heart; whereas reason and discursive faculties, have the chiefe residence in the head. *Answ.* 1. How know you that this was the generall tenent in *Solomons* dayes? From what stories of these times have you had this? The word (*heretofore*) must signifie the time before *Solomon*: I doubt me, if you should be put to it, you could not prove that the opinion of the understandings residence in the heart, was the common tenent in the world before *Solomon*; but I perceive you would have it to be so, because *Solomon* placeth understanding in the heart: as if the Scripture set downe no positive Doctrines, but what were common tenents, whether true or false. 2. The word (*heart*) here may signifie the soule or minde; as it doth often in Scripture, and in humane writings too; the soule is called heart, and the heart is called soule oftentimes. So in *Homer*, ἀλγεσι θυμὸν ἰδοίτες, eating their soules, that is, their hearts with cares. And in *Plutarch*, καρδίαν μὴ ἔχειν, is to be without reason or understanding: *vecordes* and *exvordes*, are men whose minds are distempered. So in Saint *Peter*, By the hidden man of the heart, is meant, the renovation of the minde. If then by the heart is understood the mind or soule, you must needs grant, that it is a tenent no lesse true then common, that the understanding is in the heart, whether you take it for a part, or for a power, or for a facultie of the soule. 3. This was not a common tenent many yeares after *Solomon*; for neither *Empedocles*, nor the Epicures, nor the Egyptian Philosophers, nor the Arabians, nor the Academicks, held the under-

De cognit. ver. vit. c. 6

Hom. 8. in Jerem. Epist. 59. ad Ari- tum. Sect. 1. c. 6. Sect. 2. c. 1, 4, 5.

Prov. 8. 5. 10. 8. Eccles. 1. 13, 16, 17. &c. 8. 5.

Odys. 1.

1 Pet. 3. 4.

3.

derstanding to be in the heart ; but some in the head , some in the breast, some in all the body. *Herodotus* affirmed it to be in the ears; *Blemor* in the eyes ; *Strato* in the eye-browes : onely the Peripateticks and Stoicks, placed it in the heart. 4. The holy Ghost attributes understanding to the heart ; not because it was a common, but because a true tenent : for howsoever *Galen* and his Sectaries hold the contrary, yet it is certaine , that the heart is the true seat of the understanding. For 1. The will is in the heart, therefore the understanding is there also ; such is the dependency of these two faculties, the one from the other, that the will is never without the understanding ; and indeed these two are but one in essence ; for the will is nothing else, but the understanding dilated, extended, enlarged to the desire and fruition of that object which it apprehends. 2. The Apostle saith , *That we beleeve with the heart* , (except you will have this also to be spoken according to opinion, and not according to truth) but without understanding, we cannot beleeve ; For to beleeve (saith *Thomas*) is the act of understanding, moved by the will to assent. 3. The heart is the originall subject of sense and motion, and consequently of understanding ; which cannot be in us without sense and motion. 4. Understanding is in the soule, the soule in the spirits, the spirits in the blond, and the blond is originally in the heart ; which though it be in the liver as in a cisterne, and in the veines as conduit-pipes, yet it is in the heart, as in the fountaine. 5. The animall spirits in the braine, in which they say the understanding is, are both generated of, and preserved by the vitall spirits of the heart, being conveyed thither by certaine arteries, small strings, or fibræ. 6. In a sudden feare, which is the passion of the heart, the understanding is much darkened and disturbed. 7. *Hippocrates* every way a better man then *Galen* affirms this truth : *γυναιὴ ἢ τὸ ἀνδρώπιν πείσκειν ἐν τῇ αὐτῇ κοιλίῃ* : *Mens*, minde or understanding is in the left ventricle of the heart. That Booke, *De morbo sacro*, which goeth under the name of *Hippocrates*, which contradicth this truth, is justly affirmed by *Galen* to be none of his. 8. Though I should yeeld to the *Galenists* , that the understanding is in the braine ; yet I will yeeld that it is there onely instrumentally and secondarily, and in respect of its act or exercise ; for originally, principally, and in respect of its faculty , it is in the heart onely : neither would there be any exercise of understanding in the braine, if it were not from the influence which it receiveth from the heart. Neither is this strange, that the act should be in one part, and

Secund. Sec.
q.4.artic.2.

Oportet in-
telligentem
speculari
phantasmata.
Arist.

Lib. de corde.

and the faculty in another ; for the faculty of seeing is in the brain, and yet the act of seeing is in the eye : so that though the eye were lost, yet the faculty would remaine still in the braine. As for any thing that the *Galensists* can say against this, it is of no moment ; for although the braine be hurt, wounded, or inflamed, yet the faculty of understanding is not lost, though the act or exercise be hindered. Besides, there is a phrensie or alienation of the minde, upon a hurt or inflammation of the Diaphragma, as well as of the braine ; therefore, the ancient Physicians called this muscule, *opéves*, because it being hurt, the minde was hurt : the remedies applied to the head by which the braine is cured, doe not argue that the understanding is there ; but that there it doth exercise it selfe : and yet remedies are applied sometimes to those parts where the disease is not, but in some other place ; but this I leave to Physicians. I remember that *Philo* will have the understanding which he compares to a King, to be in the head ; because there be all the senses, as the Kings guard : but he is deceived, for the guard may be in the same house with the King, but not in his bed-chamber. The guard or outward senses are in the outward court, the inward senses are in the privy chamber, but the King himselfe is in the heart, as in his bed-chamber. If any reply that the head is uppermost, and therefore the worthiest part of the body, and fittest for the King to be there ; I answer no ; for the garret or upper part of the house is for the servants to lodge in ; the King ought to be in the most inward and safest part of his palace. It is evident then by what we have said, that the holy Ghost by placing the understanding in the heart, did speake according to truth, and not to common opinion ; and therefore to write that the spirit of truth who leadeth us into all truth, speaketh rather according to opinion then truth ; is a note blacker then your inke, unfit to fall from the pen of a Christian. For even allegories, tropes, figures and parables, are truths : but I impute this slip rather to negligence in you ; then malice.

8. The vipers eggs will not help you : *Ova aspidum viperunt*, *Esay 59. 5.* they have broken the vipers eggs, as you translate it : but 1. The viper hath no eges ; for whereas other Serpents lay eggs, the viper excludeth young vipers and not egges ; therefore called *vipera, quasi vivipara* : Vipers egges are such chimera's, as your world in the Moone. 2. The aspis and the viper are of different kinds ; to say that aspis is a viper, is as true, as if you did say, a cat is a pig, or a crow is a goose. Read *Ælian, Pliny*, and others who have written

- the stories of these creatures, and Physicians who make treakle of vipers, not of aspes; if you will not beleieve me. It was a viper, not an aspe, that leaped upon Saint Pauls hand: they were aspes, not vipers, that Cleopatra applied to her breasis. 3. *This Scripture doth not allude to that common fabulous story of the viper, as you say, breaking his passage through the females bowels:* but it compares the counsels and plots of wicked men to the eggs of the aspes, which being white and faire to the eye, are venomous within, and cannot be broken without the indangering and poysoning of him that breakes them: so wicked mens smooth counsels and plots, howsoever specious in their pretences, are notwithstanding venomous and deadly in their intentions and execution. 4. Though I should grant you that vipers have egges, yet it is one thing for men to breake vipers egges, and another thing for young vipers to breake through the bowels of the female; the Scripture speaketh of the former breaking, and not of the latter; neither hath it any relation at all in this place to that story of the vipers breaking through the belly of the female.
5. Nor is this story so fabulous as you take it, having the patrocinie of so many great and grave Authors for it; namely, *Aristotle, Theophrastus, Herodotus, Alian, Plutarch, Horapollus, Pliny, Saint Basil, Saint Hiereme, Isidor, and divers others.* Scaliger indeed writes, that he saw a viper bring forth her young ones without hurt; and perhaps *Angelus, Brodeus*, and some others have seen the like: but what though we have seen some unhurt? it is a hard skirmish where none escapes. To inferre that no vipers are killed by their young ones, because some are not, is as much as if you would say, no women are sicke or pained in their childe-birth, because some are not. Thus you see that you can make no treakle or antidote of your viper for the strengthening of your opinion; the very names which are given by the Greekes and Latines to this creature, shew that this is no fiction; for *ἔχιδνα quasi ἔχρσα ὀδύνας*, having much paine in bringing forth; and *vipera, quasi vi pariens*. But we will shake off this viper from our pen, as Saint Paul did that viper in Malta from his hand; and if your viper hath bit us, let us see if your aspe (for so naturalists doe write) will cure us.
9. *The aspe* (which you translate the adder) *stops his eares*, (saith the Psalmist) *against the voyce of the charmer.* This you say is fabulous, if we may beleieve many naturalists, yet the holy Ghost alludes to it, because it was the generall opinion of those dayes. Answ. You are a great Anti-quary, for you know the common opinions that were in Davids dayes,

dayes; and you tell us not out of what records or manuscripts you have this; but indeed I will not beleeeve you, nor your many naturalists, whom you should have named, and shewed us their reasons, why they think this to be fabulous. 2. You will not (I think) hold enchanting of Serpents to be fabulous, except you will (as you use to doe) contradict both sacred and profane, ancient and recent storics. 3. Nor will you deny that there is great cunning and prudence in Serpents to avoid dangers, and to preserve themselves; our Saviour will have us to learne wisdom of them; why then may not the aspe naturally have this piece of policie to stop his eare? 4. Though there were no such naturall policie in the Serpent, yet may he not be taught by inchanters to do so? You shal read in storics of stranger matters done by Serpents; if you will reade *Irenæus*, *Austin* and *Epiphanius* of heresies, you shall finde how that sect of the Valentinians or Gnostickes called (from worshipping of the Serpents) Ophits, did teame and teach their Serpents to come out of their holes or boxes where they were kept, to crawl on their altars; so licke their oblations, to wrap themselves about their eucharist, and so returne to their holes: the like is recorded by *Virgil* of a Serpent on the altar which *Æneas* erected on his fathers tombe:

Tandem inter pateras & levæ pocula Serpens,

Ann. 5.

Libavitque dapes, &c.

I will not speake of *Olympias* her Serpent, and of many others. 5. May not Satan who hath still abused the Serpent to superstition, cause the aspe stop his eares when he is enchanted? Is it a more incredible thing for an aspe to stop his eare, then for a Serpent to speake and discourse, as he did to *Eva*. I could tell you strange storics of the Serpent *Epidaurius* at Rome; of that Serpent that barked at the ejection of *Tarquinius*, and of others recorded by grave Historians, which I will not account fabulous, though you perhaps will; because I know that Satan by permission can doe strange things. 6. It is manifest that beasts, birds, and fishes, are diversly affected, with joy, fear, courage, anger, &c. according to the qualitie of the sound which they heare: why then should the relation of the aspe stopping his eare be accounted so incredible? It may be as naturall for him to stop his eare at an ungratefull sound, as for other creatures to run away from it. 7. Though men have but small knowledge of this, yet (as *St. Austin* saith) the Spirit of God knowes better then all men do; who had not recorded this had it not been true;

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7. In Psal. 57. & 67.

Pinge duos
angues.

true; so that what is by men accounted an opinion, in Scripture it is truth, faith the same Father: by all this you may see that the holy Ghost speaketh not according to mens opinions, but according to truth; and though you should crest your two Serpents over your dore, as the Gentiles used to doe over their temples, yet they will not priviledge your opinion.

Histw. Indi-
car. l. 3. c. 3.

Job 37. 9.
& 22. 17.
Pro. 25. 29.

10. *The North winde which the Scripture calleth cold and drie, the South winde which is hot and moist, are phrases as you say which doe not containe any absolute generall truth: for though the North-winde to us on this side of the line be cold and dry, yet to those beyond the other tropicke it is hot and moist.* *Answe.* There is no absolute generall truth in most of the sublunarie works of nature, for they are subject to much change; and especially the windes which are the emblemes of unconstancy. So that even here in this Island I have known northern windes warme and moist, and southerne cold and dry; and if you read *Acosta* he will tell you, that ordinarily beyond the line, the North-winde is cold and dry, as it is in this side; and not hot and moist (as you say) though it blow from the line. The windes doe vary according to the climate they blow through, and yet they keep not the same tenure still in the same climate: the North-winde is ordinarily cold and dry in that climate, where these Scriptures of *Job* and *Proverbs* were penned; and the Scripture speaketh onely of that climate: and yet if you will beleieve *Acosta's* owne experience, these Scriptures are true also of the North-winde beyond the line. But what will you inferre upon this? marry that this proposition, the earth is immoveable, containes not a generall truth, because the North-winde is not generally cold and drie; as if you would say, this proposition, the sea ebbs and flowes, containes not a generall truth; *ergo*, this proposition, man is a reasonable creature, is not generally true; who will not laugh *petulanri splene*, to heare such Logick? But you give a reason why this phrase of the coldnesse and driness of the North-winde is not generally true, because in some places it is hot and moist: prove unto us that the earth in some places moves circularly, and then we will yeeld that this phrase of the earths immobility is not generally true. 2. These Scriptures which you alledge for the coldnesse of the North-wind may be diversly understood: for *Job* 37. 9. there is mention made of dispersers or scatterers, but not of the North-wind: and this quality is in every wind to disperse the clouds, as well as to bring them. In the *Pro.* 25. 23. it is said, that *the North-winde bringeth forth raine*; for so the Hebrew

brew word *לחור* signifieth, as well as to drive away; and so *Ju-
nius* and *Tremellius* translate it, *pignit*; and in stead of *Aquila*, they
have *Cacias*, which is the North-East-winde, though some think it
to be the North-West: so the seaventy Translatours have *יצעזעזע*
to excite and stirre up: so *Job* 37. 21. where some translate, faire
weather; in Hebrew, Greeke, and in the old Latine Transla-
tion, it is, *Gold cometh out of the North*. Thus upon totter-
ing and uncertain foundations, you raise the structure of your
wilde phantasies.

11. The darkning of the Sunne, the turning of the Moone into
bloud, and the falling of the Stars will not help you; for these are
not naturall effects, but miraculous workes of God to be done a-
fore Christs second coming: and to say that these things shall be
but in shew or appearance, is to make us thinke that God will af-
fright the world, as we doe little children with hobgoblins. How
will the truth of his miracles, the terrour of his judgements, the
greatnesse of his majestie be seene, if these things shall not truely
and really be effected? you may as well say, that all former mira-
cles were but in shew or appearance: as Christs turning of water
into wine; his walking on the Sea; his raising of the dead; curing
of diseases; appeasing of the storme, &c. Is it a thing more incredi-
ble for the Sun to be miraculously darkened at Christs second co-
ming, then it was at his passion, when the Sun lost his light, the
Moone being at full? Which miracle was acknowledged by that
learned Arcopagite, being then in Egypt. Or is it more incredi-
ble that the Moone shall be turned into bloud, then for clouds to
raine bloud? of which cloudy showers, you may read in the Ro-
man and French stories, and in our owne Chronicles at home, of
bloud that rained seaven dayes together in this Island, so that the
milke was turned into bloud. What say you of all the waters of
Egypt which were turned into bloud? and if wee may beleieve the
Church stories, when *Felix* the Martyr suffered, for not delivering
up the Bible to be burned, about the yeare of Christ, 302. the
Moone was turned into bloud: thus God is able to make your
world in the Moone *Aceldama*. And why shall we not as well
beleieve that the Starres shall fall, as that they fought against *Sisera*,
or that a new Starre conducted the Wise-men to Christ? God is
as able to shake the Heavens, and the Stars from them, as a winde
is to shake a fig-tree and spoile it of leaves: he that settled the Stars
may remove them. And to tell us that these Meteors which wee
call

call falling Stars, are meant ; is a childe conceit , seeing such doe fall almost every night, and are the meer works of nature, no wayes fit to expresse Gods judgements, and the terrour of that day.

John 3. 8.

12. Christ saith to *Nicodemus*, that he knew not whence the winde cometh, nor whither it goeth. You inferre that none knows this as the vulgar thinke; and therefore this, and such like phrases are to be understood in relation to their ignorance; and the Scripture (you say) speaks of some naturall effects, as if their causes were not to be found out, because they were generally so esteemed by the vulgar. I perceive you are none of the vulgar, but, *de meliore luto*; for it seemes you know these causes which the vulgar know not: you are *gallina filius alba*; a happy man that knowes the hid causes of things:

Felix qui poteris rerum cognoscere causas.

I confesse my ignorance in the most of these naturall causes; Philosophers reasons are not satisfactory to me:

Obstat cui gelidus circum praecordia sanguis.

But if the wiser sort know from whence the winde commeth, which the vulgar doe not; so likewise must the wayes of the Spirit in our regeneration be known to them also, though not to the vulgar: but sure that is not Christs meaning; for he meanes that the way and manner of our regeneration are as hid & secret to men without divine revelation, as the wayes of the winde are: and as none knows the one, so none the other. 2. If you know from whence the winde cometh, and whither it goeth, I pray tell us, and hide not your light under a bushell: perhaps you will say that it cometh from North, or South, East, or West; if you can say no more, you were as good lay your finger on your lip with *Harpocrates*, and say nothing. For tell us, out of what part of the earth or sea doth the North-winde arise, when it blowes over our Island; and how farre doth it goe, or where doth it end? Whence came the great South-West-winde, which the 27. of *December* last sunke so many ships, overturned so many trees, overthrew so many barnes and dwelling houses? and where did this winde end? Can you tell us whence the Brises or trade-windes under the line which blow continually from East to West, doe proceed? or doe you know whence the Aniversarie windes in Egypt, called *Etesia*, doe come? These begin to blow when the dog-starre ariseth, and continue forty dayes together; such windes blow in Spaine and Asia, but from the East; in *Pontus* from the North. I thinke that though you should aske of the Finlanders who used to sell windes, (if you will beleeve *Olaus*) they

they cannot informe you. 3. How can Philosophers tell us from whence the winde cometh, when they know not as yet what the winde is, whether an exhalation, or the aire moved, whether it ariseth out of the sea, as *Homer* thinks, or out of the bowells and caves of the earth, as others suppose. *Pliny* will tell you of Caves where the winde blowes continually; and *Neptune*, in *Vergil*, will shew you, that *Aeolus* hath no power in his kingdome, but in the hollow caves and rockes of the earth :

——tenet ille immania saxa,

——Ille se jactet in aula

Aeolus & caco, &c.——

4. *St. Austine* was no vulgar man, and yet hee confesseth his ignorance, that he knowes not out of what treasure God bringeth forth his windes, and his clouds; indeed wee may all acknowledge with *Seneca*, that our knowledge is but ignorance; and because of the uncertainty of humane conjectures, it is best to content our selves with the knowledge of that supreme cause of all naturall effects revealed to us in Scripture. *In Psal. 134*

13. *Solomon* (you say) doth onely mention the sea being obvious, and easily apprehended by the vulgar, to be the cause of springs and rivers, though in nature there be many other causes of them. *Eccles. 1. 7.* I answer, *Solomon* doth mention the sea onely, not because the vulgar apprehends it so, but because indeed and verily it is so; to wit, the onely prime cause of springs and rivers: if you should tell mee that raine and vapours are other causes, you would say nothing, for these are subordinate to the sea; hee that names the prime and superiour cause of any effect, doth not exclude, but include all subordinate and inferiour causes. If, I say, the sea is the cause of springs, I say inclusively, that raine and vapours (which have their originall from the sea) are the causes also. When the Jewes said they were the sons of *Abraham*, they excluded not *Isaac* and *Jacob*. When Saint *Paul* saith that God giveth to every seed its body, hee excludes not the Sun, Raine, Earth, and the formative power of the seed, which are subordinate causes to God. *I Cor. 15.* 2. *Solomons* drift was not to make a Philosophicall discourse about the causes of rivers, but to shew the vanity of things by the continuall issuing and returning of rivers from and to the sea, as hee had done before by the Sunnes motion.

14. For the thunder, which *David* calls the voice of God; wee say that this phrase is not to be understood with relation to some

mens ignorance, as you fondly conceit, but to Gods omnipotency and providence; who by his thunder, as by a voice, speaks unto the world: and a powerfull voice it is to shake the hearts of the proudest Atheists, even of *Caligula* himselfe; and to teach the most perverse Epicures, that there is a God in heaven who ruleth and judgeth the earth. No eloquence prevailed so much with *Horace* as this, when hee was *parvus Deorum cultor*, an Epicure: it made him renounce his errour, — *& retro vela dare*; by which the Gentiles acknowledged there was a supreme God, whom they called *Jupiter*, and that hee had the power of thunder,

— *qui fulmine concussit orbem.*

— *qui fœdera fulmine sancit.*

So the same *Virgil* acknowledgeth that the thunder made the people to stand in awe of God:

— *ante Genitor cum fulmina torques,*

Aen. 4.

Nec quicquam horremus, &c.

By this, God moved the hearts of the Romanes to use the Christians kindly, when by thunder hee overthrew the Marcomans; and the Christian Legion from thence was called, The thundering Legion. It is his weapon with which hee fights against wicked men, and which hee flings *ἐν τοῖς ἐμάρμας*, against perjurers, as *Aristophanes* saith: all the thundering disputations of Philosophers, and the small sparkes of light or knowledge which they have of naturall causes, are but toyes; they are no better then glow-wormes. What is the croaking of frogs, to the cracking of thunder, or the light of rotten wood, to lightning in the aire? Therefore, in spite of all Naturalists, let us acknowledge with *David*, that it is the Lord that maketh the thunder, that this voice of the Lord breaketh the Cedars, and divideth the flames of fire, and shaketh the wildernesse, &c. Besides, the thunder is called Gods voice, as the winde Gods breath, by an Hebraisme: as tall Cedars and high mountaines are called the Cedars and Mountaines of God: the voice of God is as much as if you would say, an excellent voice. Then whatsoever Naturalists affirme peremptorily of the thunder, I will with *Job* and *David*, acknowledge God to be the onely cause; and will aske with *Job*, *The thunder of his power who can understand? Quis tonitrus sonum, aut quemadmodum oriatur explicandis rationibus assequi possit?* saith *Symmachus*, on these words of *Job*.

Job 26. 14.

15. The constellation called the 7. Starres, are found (you say) by later discoveries, to be but six: What if I should grant you this, and

and more too then you desire ; to wit, that of old they were accounted but six of some : So *Ovid*,

Dicuntur septem, sex tamen esse solent.

So *Aratus*,

Ἐξ διαίπερ ἔσσαι ἐπὶ λίαι ὀρθαλμοῖσιν

lib. 4. Fast. in
Apparen.

And generally the Poets held, that though *Atlas* had seven daughters, called *Atlantides* from him ; yet one of them, to wit, *Merope*, or as others say, *Electra*, hides her face : but divers others hold there be seven to be seen. And *S. Basil* tells us in plain termes, that there are seven stars of these, and not six, as some think: but let there be seven, or but six, what is this to your purpose ? Mary, that the Scripture, *Amos* 5. 8. speaks of seven starres, according to common opinion, being but six in *Galilies* glasse ; but indeed the Scripture speaks neither of six nor seven, but of a certaine constellation, which the Seventy Interpreters leave out, as a thing unknown to them. *Symmachus*, and *Theodotion* interpret Πλειάδας the old Latine hath it *Arcturus*, which is a starre in *Bontes* behinde the taile of the great Beare ; in English we call them **Seven Starres**, and to mine eyes they seem to be so many: But if in *Galilies* glasse there be but six; it's no wonder, for you tell us eliewhere, That the better the glasse is, the lesse will the starres appeare. It is not like then, that so small a starre can be seen through it : Let therefore the number of 7. remaine, it is a sacred number ;

In Caten.
Comitoli in
Job 9.

— numero Deus impare gaudet.

CHAPT. IIII.

1. Many Philosophicall points are handled in Scripture.
2. The heavens how round in the opinion of the Fathers.
3. Wee must have a reverend esteem of the Fathers.
4. How the seas not overflowing the land may be esteemed a miracle.
5. The works of Nature may be called miracles.

HERE you tell us of *Learned men which have fallen into great absurdities, whilst they have looked for the grounds of Philosophy out of Scripture, which you shew by the Jewish Rabbines, and some Christian Doctors.* *Ans.* As it is vanity to seek for all Philosophicall grounds in the Scripture, so it is stupidity to say there be no Philosophicall grounds or truths to be found in Scripture : whereas *Moses*, *Job*, *David*, *Solomon*, and other Penmen of the holy Ghost, have divers passages of Philosophy in their writings, as I have shewed heretofore of divers constellations out of *Job* : and why may not Philosophicall truths be sought for out of Scripture, seeing Philosophy

Cont. Lansbe.
l. 1. sc. 1. c. 7.
Rerum divi-
narum bu-
manarumq;
cognitio.

is the contemplation or knowledge of divine and naturall things; both which are handled in Scripture, divine things principally, naturall things in the second place; that by naturall things we may come to the knowledge of Divinity, and by this to the attainment of eternall felicity. Therefore in Scripture is recorded the creation, the cause, qualities, and effects of the creature, that by these we may come to the knowledge of the Creator. If the Gentile Philosophers had not found much Philosophy in Scripture, they had never conveyed so much out of it, (as they did) into their Philosophicall books, as *Theodore* sheweth. The idle opinions of many Philosophers, which are grounded neither on sense, nor reason, (as yours of the Earth's motion) are not to be sought for in Scripture, but Philosophicall truths which are grounded on either, or both, may be sought and found there: and whatsoever idle conceits the Jewes have had of Scripture, or their idle fables which they have grounded on it, concerne us not: they were a giddy headed people, given over to a reprobate sense, groping at noone day; having their hearts fat, and their eyes blinded, that they may not see: their seeking for Philosophicall truths in Scripture was not the cause of their foolishnesse, (for few or none of them were addicted to the study of Philosophy) but their owne voluntary blindnesse, pride, stubbornnesse, and contempt of Christ the internall and essentiall Word of God, are the causes of their ignorance in the externall Word; so that they (having forsaken the truth) follow lyes. But as for the Christian Doctors, they have not exposed themselves to errors, by adhering to the words of Scripture, but you are fallen into grosse errors by rejecting the words of Scripture: These which you count errors, are truths; as, That the Sun and Moon are the greatest lights, That there are waters above the firmament, That the starres are innumerable, as wee have already shewed. As for the roundnesse of the heaven, though the Fathers doubt of it, yet they doe not absolutely deny it. *Justine Martyr* doth but aske the question, Whether their opinion may not be true, which hold the roundnesse of the heaven. *St. Ambrose* saith, that it is sufficient for us to know that God hath placed the heaven over us like a vault, and stretched it out like a curtaine or skin. *St. Chrysostome* (whom *Theodore* and *Theophylact* doe follow) deny the roundnesse of heaven, as it hath relation to our climate or habitation; for so the heaven is indeed, as the Scripture saith, a vault or skin; so that albeit the whole heaven being considered

Resp. ad Qu.

93.

Hexamer. li.

1. cap. 6.

Psal. 104. 2.

Isa. 40. 22.

dered with the whole earth, be round, yet being considered with reference to parts or climates of the earth, it is not round : Or wee may with St. *Austine* so understand the word [*vault*] or [*curtaine*] or [*skin*] that these tearms may stand well enough with the roundnesse of heaven ; *si sphaera est, undiq; camera est* : if it be sphericall, it is a round vault ; *pellis in rotundum suam extenditur*, a skin may be made round or sphericall : for a round bladder (saith hee) is a skin ; so then neither the word vault, skin, canopy, or tabernacle, are words repugnant to the roundnesse of heaven, neither have you such reason to insult over the Fathers, as if absolutely and peremptorily they had denyed the roundnes thereof : For S. *Austine* shew-
 eth, that the stretching out of heaven like a skin, is mentioned onely to shew the power of God, and with what facility hee made the heavens, with more ease then wee should extend a skin : and St. *Hierome* saith, that the opinion of the earths roundnesse is the most common opinion, agreeing with *Ecclesiastes*. So when the Fathers say that the earth is founded on the seas, &c. they doe but follow the Scripture phrase, which how to be understood wee have already shewed, and will touch it againe anon.

3. Suppose these were errors ; yet you must not take advantage from some errors in the Fathers, to lessen their credit in other things ; they were but men, and had not the perfection of knowledge which is in Angels, called therefore *Demonies* and *Intelligentia*. St. *Bernard* saw not all things ; we should be sparing in raking into their errors, in uncovering of their shame ; and like flies, delighting in their soares. But yet you cannot obtain your purpose in ripping up of their errors ; for it will not follow : the Fathers erred in denying the sphericall figure of the heaven, &c. therefore they erred in denying the motion of the earth : must it follow, that because S. *Cyprian* erred in the point of rebaptization, therefore no credit must be given to him in affirming Christs incarnation ? and, I pray, what great error was this in them, to conclude from manifest places of Scripture, that the seas not overflowing the land is a miracle, and that they are restrained by the speciall power of God ? I grant that all seas are not higher, nor so high as some lands ; but it is manifest, that the sea in some places is much higher then the land, as the *Hollanders* and *Zelanders* know ; and that their lands are not overwhelmed with the sea in a storme, is a miracle ; and the finger of God is to be seen in restraining of them : which seas, when hee is angry with the inhabitants, hee lets loose

De Genes. ad
liter. l. 2. c. 9.

August. in
Psal. 104.

Hier. c. 3. ad
Ephes.

Job 8. 8.
Prov. 8. 29.
Jer. 5. 22.
Psal. 104.

Sometimes, to the overthrow of townes and villages :

—— *Campisque per omnes,
Cum stabulis armenta trahunt* ——

In the dayes of *Sesoftris* King of Egypt, it was by measure and observation knowne, that the Red-sea was much higher then the land; but we need not goe so farre, the coast of our owne Island in divers places being lower then the sea, will prove this to be true; where we may daily see Gods power, in curbing the violence of that furious creature :

Du Bartas
3. Day.

—— *For the Eternall knowing*

*The Seas commotive, and unconstant flowing,
Thus curbed her, and 'gainst her envious rage,
For ever fenc'd our flowry-mantled stage :
So that we often see those rowling hills,
With roaring noise, threatning the neighbours fields ;
Through their owne spite to split upon the shoare,
Foaming for fury that they dare no more.*

Σαῦρα
Σαυδρω.
Barbara Py-
ramidum si-
leat miracula
Mr mphis
Martial.
Perseverantia
consuetudinis
amisse admi-
rationem. De
Trin. l. 3. c. 2.
c. 5. & c. 6.

Virgil. l. 4.
Geor.

5. Why then may not this be called a miracle whereas many strange, yea ordinary effects of nature are called miracles? *Plato* called man the miracle of miracles: and *David* saith, *that fearfully and miraculously he was made.* Doe not you know that *Diana's* Temple, the Egyptian *Pyramides*, and the rest of those stupendious buildings, were called the seven miracles of the world? not only Gods extraordinary works above nature, but also his ordinary works in nature, are miracles, though they be not so accounted (saith *Saint Austin*) because we are so used to them. For as it was a miracle to turn water into wine in *Cana of Galilee*, so (he saith) that miracle is seene daily: for who drawes the moisture or water from the earth by the root into the grape, and makes wine, but God? That Gods finger is to be seen in every worke of nature, the Poet doth acknowledge:

—— *Deum namque ire per omnes Terrasque tractusq; maris, cælumq; profundum.* A miracle is so called because it excites admiration; and doe we not admire Gods power in earth-quakes, prodigious births, thunders, lightnings, and in the Eclipses of the great Luminaries? therefore *Saint Austin* checks the vanity of Philosophers who went no higher in the contemplation of these naturall effects, then to naturall causes; not looking unto God the supreme cause of all. Hence then it appears that the Fathers are not mistaken, in attributing the not over-flowing of the sea to a miracle: howsoever (as your figure sheweth) the sea may seem to be, and yet is not

higher

higher then some lands. Neither is there any contradiction in Scripture, though sometime it make the sea higher then the land; and sometime lower; for so it is according to the diversity of coasts; and because of much moisture and water found in the bowels of the earth, and in that it is encompassed with the sea, it may be said, that the earth is founded on the waters: therefore no man can be deceived in concluding points of Philosophie from expressions of Scriptures (as you say) but from the misunderstanding of Scripture; for what is true in Philosophie cannot be false in Divinitie; for in subalternall sciences there can be no repugnancy.

C H A P. V.

Divers Scriptures vindicated from false glosses: as, Eccles. 1. 4. by which is proved the earths immobility, and heavens motion. 2. How the earth is eternall and renewed. 3. The Scripture speaketh not plainly and ambiguously in the same place. 4. The Scripture useth Metaphors. 5. How the earth stands out of the water, 2 Pet. 3. 5. by which its immobilitie is proved. 6. what is meant, 1 Chren. 16. 30. &c. by these words, The world is established, &c. 7. what is meant Psal. 90. 2. by the earth and the world. 8. How the heavens Prov. 3. 19. are established: and the Moon and Starres, Psal. 89. 37. &c. 9. How the heavens 2 Sam. 22. 8. hath foundations. 10. what are the pillars of heaven in Job 10. of the ends, sides, and corners of the earth in Scripture. 11. what is meant Isa. 51. 6. by the planting of the heavens. 12. How the earth is established. 13. what Job means by the earth moved out of its place.

YOU would faine here overthrow those Scriptures which shew the immobilitie of the earth. 1. That place of Ecclesiastes, *Eccles. 1. 4.* (one generation cometh, and another passeth, but the earth standeth for ever.) You say, That it is not the purpose of this place to deny all kinde of motion to the whole earth; but that of generation and corruption. But I say, that it is neither the purpose of this place to deny the motion of the earth, nor to affirme the motion of the sunne: for why should he either deny the one, or affirme the other, which no man doubted of, or called in question? his drift is to prove the vanity of mankind, from the stability of the earth, and motion of the sun, windes and waters; thus man is inferiour to the earth, because the earth is firme, stable, and immoveable; whereas man abideth not in one stay, *but cometh forth like a flower, and is cut downe, he flyeth like a shadow, and continueth not.* Or (as it is here) *he cometh and goeth;* so that coming & going are motions, to which man is subject, and are opposite to the immobilitie of the earth. The Antithesis then or opposition here is not between the substance of man and of the earth; for

for man in respect of his substance is permanent as well as the earth, if either we consider his soule, or his body, according to the first matter; but the opposition is between the qualities, outward estate, and life of man, and the immobilitie of the earth; so that the standing of the earth must be meant either of its permanency, or immutabilitie, or immobilitie: not the first, for man (as I said) is not inferiour to the earth in permanencie; not the second, for the earth is subject (as all sublunary things are) to mutability and changes; therefore the third, which is the earths immobility, must needs be understood. And if *Solomon* had thought otherwise, to wit, that the earth moved, and the sun stood still; he would have said, *The sunne standeth for ever, the earth ariseth, and the earth goeth downe, &c.* But, for all his knowledge, he was ignorant of this quaint piece of Philosophie. Again, he proves mans vanity from the motion of the sunne, windes, and waters, though they move and are gone for a while, yet they returne againe; but man being gone returns no more: so that man hath neither the stability of the earth, but passeth away, and being past, hath not the power to returne againe, as the sunne, winde, and waters doe. It is plaine then, that the standing of the earth is opposed to its locall motion, and to the motion of men coming and going; but it were ridiculous, as you say, to inferre that the earth is immoveable, because permanent; for the mill and ship may be permanent, and yet move; this illation is none of ours, we say it is immoveable because *Solomon* here sayes so; for he saith it standeth; and if standing be motion, then the earth moves. It is more safe for us to say, That the earth is immoveable, because *Solomon* saith it stands; then to say it is moveable, because the word standing may signifie permanency, or abiding. As for the motions (as you call them) of generation and corruption, from which you free the earth, they are not indeed motions, but mutations: *Motus est à termino positivo, ad terminum positivum.*

You checke the Jewes for collecting the earths eternity from the word (*Leguolam:*) albeit I know that this word doth not alway signifie eternity, but a long continuance of time; yet that the earth is eternall, *à posteriori*, I thinke you will not deny, except you will tread in some new way of your owne different from that both of ancient and modern Divines, who affirme with the Scripture, That *there shall be a new earth*; but new in qualities, not in substance; a change of the figure, not of the nature; of the forme, not of the substance; a renovation of that beauty which is lost by man, but no creation

ation of a new Effence; so that the Jewes might justly inferre from *Solomons* words, that *the earth is eternall, or stablished for ever.*

You snap at Mr *Fuller* for urging that these words of *Solomon* must be all understood literally, and not some of them in reference to appearance, but without cause; for can the same Scripture with one breath blow hot and cold? At the same time speake plainly and ambiguously; in the same sentence have a double meaning? The Scripture which is plaine and simple, is farre from double dealing. Will any thinke that when *Solomon* saith, There be three moveable bodies, the Sun, Windes, and Rivers that there are indeed but two; and that the Sun moves not but in appearance, that is, moves not at all? This is to make the Scripture indeed a nose of wax; for what may I not interpret this way? Christ fed the people with five barley loaves, that is, with foure loaves, for one was a loafe but in appearance. Three Wise-men came from Persia to worship Christ, that is, two came indeed, but the third came onely in appearance. You would laugh at me, if I should tell you, that of any three ships or mills, which move really, one did move apparently; whereas both you & I see them move really. Now, if the Sun doth not move, why doth the Scripture say it doth? What danger would arise if it spoke plaine in this point? You say, *That the Scripture speaks of some naturall things, as they are esteemed by mans false conceits*: But this is a false conceit of yours; the Scripture doth not cherish or patronise the falshood of our conceits; the end of it is to rectifie our erroneous conceits. It is true that in high and obscure points of Divinitie, the Scripture condescending to our capacity, useth the tearms of familiar and earthly things; that by them we may by degrees ascend to the love and knowledge of spirituall things; for the naturall man understandeth not the things of God: but in naturall things which are obvious to our senses, we need no such helps. If the Sunne stood still, it were as easie for us to understand his standing, as his moving.

What you talke of the ends of a staffe, and of the ends of the earth, is impertinent and frivolous; for the Scripture for want of proper words useth metaphoricall: and because there is no other word to expresse the remote bounds of the earth, then the word *End*; therefore the Scripture useth it. But you inferre that because the ends of a staffe, and the ends of the earth cannot be taken in the same sense; that therefore the motion of the sun, and of the winds must be understood in divers senses: make an Enthymeme and see the

consequence; the Scripture saith, That a *staffe hath ends*, and that *the earth hath ends*, which cannot be understood properly, and in the same sense; *ergo*, when the Scripture saith, *The sunne moveth, and the winde moveth*, both cannot be understood properly and in the same sense: as if you would say, The Scripture affirms that Angels are the sons of God, and that Judges are the sons of God, but not in the same sense: *ergo*, when the Scripture saith, *That the raven flew out of the Arke, and the dove flew out of the Arke*: both must not be understood in the same sense, but the one properly, the other in appearance.

2 Pet. 3. 5.

Our second prooffe out of Scripture which you goe about to undermine, is that of Saint Peter: *The heavens were of old, and the earth standing out of the water, and in the water.* You say, *That the word $\tau\upsilon\epsilon\sigma\tau\omicron\iota\varsigma$, is equivalent to (sist,) but I say, that this were to confound two predicaments, to make the essence and accident all one: the site or immobility of the earth, and the essence or existence thereof cannot be one or equivalent.* 2. This were to commit a plaine tautology, for so the words must run; The earth was, was out of the water; if these two words (*was*) and (*standing*) be equivalent. 3. The Apostles scope is not only to shew that God made all the earth, (as you say) but that he made it thus; that is, standing or immoveable: that he is the authour not onely of its being and essence, but also of that inseparable accident of immobilitie. 4. We collect not the rest and immobilitie of the earth from the bare expression of its being or creation, but from its being thus made; for so we may reason; What God hath made to stand fast out of, and in the water, is immoveable; but God hath made the earth thus: *ergo*, it is immoveable. 5. *It were ridiculous to conclude the immobility of a ship or a mill-wheele, because a part of them was made to stand above, and another part under the water for they were not made for that end to stand, but to move:* But if you had brought your Simile from the rockes of the sea, you had done well; for God made these rockes to stand partly above, and partly under the water; and hee made them not to flecte with the liles of the lake Lommond, therefore they are not moveable, for God hath made them immoveable; and so hee hath made the earth: therefore, both the old and new Latine translations, doe use the word *consistere*, which signifieth *constanter stare*.

1 Chr. 16. 30
Psal. 93. 1.
Psal. 96. 10.

Our third Argument is taken from these words, *The world is established that it cannot be moved*; which words you will have to be spoken of the world in generall, or the whole fabricke of heaven and earth;

earth ; but you are widely mistaken ; for in the Hebrew text, the word [*holam*] which signifieth the whole universe of heaven and earth, is not used in any of these places ; but the word [*Tebel*] which signifieth the round globe of the earth, or the habitable world, as *Pagnine* hath it. So the Greek Interpreters in all these places use the word *οικυμένη*, and not *κόσμος*, which signifieth the whole bulk of the world, so called from its beauty : Now *οικυμένη*, *οικεομένη*, is alwaies used for the habitable earth, so that *οικυμενική σῶσις*, is *habitor*, *οἰα* a Synod of men dwelling upon earth, and not of Angels or stars : *κῆρ*, *habito*. And when the Patriarch of Constantinople assumed the title of *Oecumenicus Episcopus*, he did not purpose (for all his pride) to bring the Angels and starres within the verge of his Diocese or Episcopacy. So the old Latine translation never useth the word *mundus*, but *orbis*, and *orbis terra* ; and *Junius* with *Tremelius*, use the words *orbis habitabilis*, that is, the earth ; so that *orbis* is not used for *mundus* in any classick Author in prose, but for the earth, or regions and dominions of the earth : as, *Orbis Asia*, *Europa*, *orbis Romanus*, &c. Besides, in the 96. *Psalm*, the heavens and the world (as wee translate it) are distinguished in the 5. *ver.* God made the heavens : in the 10. *ver.* hee established the world, or earth. We need not then to have recourse to a Synecdoche in the three originall Tongues.

But you tell us, That *David* (you would have said *Moses*) seems *Psal. 90. 2.* to make a difference between the earth and the world, when hee saith, *Before thou hast formed the earth and the world* : hee doth but seeme to make a difference, but indeed hee makes none ; for the copulative [*and*] is put *exegeticè*, for the disjunctive [*or*] here, and elsewhere in Scripture : as in *Exodus*, *Hee that smiteth his Father* ; in the Hebrew it is *Abin ve Immo*, his father and his mother : and in the 17. *ver.* of the same Chapter, *Hee that curseth his father and his mother*, which the Evangelist St. *Matthew* rendereth, *πατέρα ἢ μητέρα*, father or mother : so among profane Authors the same kind of speech is used : as, *Natus annos 60. & senex*. Here then God made the earth and the world, that is, hee made the earth, or the habitable world. 2. Wee may explain *Moses* his words here thus : God made the earth the first day, and then it was *γῆ*, earth ; but it was not made habitable till the third day, and then it became *οικυμένη*, a habitable world ; and so in this respect there is some difference between the earth and the world, that is, between the earth mingled with the water, and separated from it.

Prov. 3.19. Because Solomon saith, That God hath founded the earth, and established the heavens, you inferre, That the places of Scripture can no more prove an immobility in the earth, then in the heavens. But here also you speak at randome; for the Hebrew word כונן *Conen* here, which *Arias Montanus*, and the old Latine translate, *stabilivit*, doth properly signifie, to dispose, or order; and so we translate the word *Conenu*, Ps. 37.23. *a good mans steps are ordered by the Lord*. This word also signifieth to prepare: as, *David prepared a place for the Ark*. Therefore the LXX. Interpreters explain this word here by ἡτοιμασε, *hee hath prepared the heavens*; and *Junius*, with *Tremelius*, by [statuit] *hee hath appointed*, [or disposed] *the heavens*. But what though wee should yeeld that the word may signifie to establish, will it therefore follow that the heavens are immoveable, because established? No: for there is the stability of nature, and naturall qualities, which is opposite to mutability, and so the heavens are established; and there is the stability of rest, and so it is opposite to mobility: thus the earth is established. But, you will say, seeing the same word [establish] is spoken of both the heaven, and of the earth, how shall you know that it implyeth immobility in the earth, and not in the heaven? I answer, well enough; because the Scripture, speaking of the earth, saith, *It is established that it cannot be moved*: but the Scripture never speakes so of the heavens, but onely that they are established; not a word to shew any rest or immobility in them.

Now you urgeus with those places that speak of establishing of the Moon, Ps. 89.37. of the stars, Ps. 8.3. of the heavens, Pro. 8.27. Why (say you) should these be counted sufficient expressions to take away motion from the earth? I answer, we do not count this word [establish] of it self a sufficient expression; for the originall word is ambiguous, and diversly interpreted, both by the Greek, and Latine; and moveable things may be established; the moving Tabernacle, as well as the immoveable Temple. But if I should tell you, that though the Tabernacle be fastened or established, yet it is moveable, and the Temple is so stablished that it cannot be moved: You cannot but say, that my expression is sufficient to shew the difference of stability in the one, in and the other. So speaks the Scripture in plain tearms of the Earth's stability, Thou hast founded, [or established] the earth, and it shall stand: Thou hast laid the foundations of the earth, that it shall not be moved for ever; so it is in the Hebrew. When a thing then is said to be so established, as that it standeth fast on a sure foundation, and cannot be

be moved, wee must needs acknowledge, that this is a full expression of its immobility ; which phrases are never spoken of the heaven, or any starre ; wee read that the Sun stood once, but that was by miracle : of any other standing in Scripture we never read. So we read of the moving of the earth by earthquakes, but not else, *Isa.* 13. 13. and of removing of islands, *Rev.* 6. 14. but never of a circular motion of the earth: for in that respect he hath made the earth that it shall not be moved And to tell us, as you do, that the earth is established so onely that it shall not be removed, is both to mince the Scripture, and the power of God; for as it is more easie to move an heavy body then to remove it, so is the power of God so much the greater, in that hee hath made a body of such solidity, weight, and bignesse, that it cannot be so much as moved, farre lesse removed : and if the Scripture be so carefull and punctuall in setting forth Gods greatness and power in so small a matter, as is the moving of a little part of the earth by earthquakes ; doubtlesse it would not have been silent in a matter of such admiration and power, as is the moving of the whole body of the earth, if ever hee had moved it, either by himselfe, or by his Angels, or by Nature his handmaid.

Whereas you say, *That fundavit cannot be taken properly, as if the earth, like other artificiall buildings, did need any bottome to uphold it.* I answer, that *fundare terram* is not to settle the earth upon a foundation or bottome, but to make it the foundation of all heavy bodies ; and therefore it is called *βᾱσις*, *separation*, *ὑποβᾱσις*, *fundum*, the bottome, and *fundus*, the foundation ; so that nothing hath any foundation but on and by the earth. Ships floating on the water, have not any foundation, till they be tyed by anchors to the earth ; which the Poet knew, when he said,

Anchora fundabat naves :

therefore not metaphorically, but properly, doth the Scripture speak, in saying, *God hath founded the earth* ; but whereas the heavens are said to have foundations, *2 Sam.* 22. 8. by heavens there are understood the mountaines, and so the vulgar Latine reads it : and so in *Psal.* 18. 8. the text hath mountaines, and not heavens. Mountaines are called heavens metonymically, because they are in that part of heaven which we call the aire ; therefore by the Poets they are called, *Aërei montes* ; and so all the space from the superficies of the earth upward, is called heaven both in sacred and profane writings ; even this upper part of the earth wherein wee live is called heaven by the Poet :

The new Planet no Planet.

Sed falsa ad Cœlum mittunt inſomnia Manes;
and the Inhabitants of the earth are called *Superi* by the ſame Poet,
Quæ quis apud Superos furto letatus inani.

And as hills are called heaven, ſo heaven is called hills by *David*, when hee ſaith, *I will look unto the hills, from whence cometh my ſalvation.* By the foundation of the heavens then, is meant nothing elſe but the foundation of the hills. Now why you ſhould call the earth an artificiall building, I know not : it was neither built by an artifice, nor by the rules and tooles of Art ; your earth in the Moon may rather be called artificiall, as being the work, not of God, nor Nature, but of *Copernicus* the maſter carpenter, and his workmen, of which number you are one ; but you ſhould doe better, if with that wiſe maſter builder *St. Paul*, you would build upon the corner ſtone, and the foundation Chriſt Jeſus, according to the grace of God which is given to you.

You ſay well, *That the pillars of heaven mentioned by Job will not prove them to be immoveable* ; for wee know that heavenly pillars are moveable as the heavens are : ſo were theſe two pillars that conducted *Israel* through the deſart, and thoſe night meteors, called ſierie pillars. 2. By *heaven* may be meant the Church called oftentimes heaven in Scripture, and by pillars the eminent Doctōrs of it : So *Peter*, and *Paul*, were called pillars, and every good man ſhall be made a pillar in Gods Temple. 3. By the pillars of heaven may be underſtood the Angels, called alſo the powers of heaven, in the Goſpell. 4. High hills may be called pillars of heaven, not becauſe they uphold heaven, as the Poets write of *Aſias*, but becauſe they are high in the aire, which is called heaven,

———— caput inter nubila condunt.

5. The onely true pillar by which both heaven and earth is ſuſtained, is the power of God ; which power cannot be ſhaken in it ſelfe, but in its effects. 6. Which way ſoever you take the pillars of heaven they are moveable ; but now it will not follow that the pillars of earth are moveable alſo : though the pillars of the Tabernacle were moveable, the pillars of the Temple were not ſo. Such as the earth is, ſuch be its pillars ; its ſelfe is immoveable, and ſo are its pillars ; except when that great *Sampſon* ſhakes them being grieved for the many wrongs that hee ſuffers by our ſins ; then hills, rocks, houſes, and cities tumble down, and multitudes are buried before they be dead. If then we ſhould prove the immobility of the earth, from the ſtability of its pillars, wee ſhould have reaſon for it ; but

to inferre that the heavens were immoveable, because they have pillars, were ridiculous.

We read (say you) of ends, sides, and corners of the earth, and yet these will not prove it to be of a long or square forme. *Ans.* Yes it will: for the Scripture doth not describe the earth to us as a smooth and uniforme globe, but as a great body consisting of divers unequal parts; as hills and vallies, and as a body broken by the irruption of many seas, as the Mediterran, &c. Consisting also of lakes and rivers, not to speake of Isles and Isthmus: hath not then the earth in this respect many ends, corners, and sides? if you did saile along the coasts of the earth, you should finde it so. 2. The earth of it selfe is not round, for without the water it doth not make a globe. 3. Though it were perfectly round, yet it must have its longitude and latitude. 4. By the earth the Scripture oftentimes meanes the land of Judea, with the neighbouring countreys: as, his dominion shall be from the river to the ends of the earth; which words were spoken of Solomon literally. *All the ends of the earth have seene the salvation of God*; which was not seen by the Americans in Davids dayes. So all the world was taxed under Augustus, that is, the Roman world. 5. Whatsoever is finite hath bounds and ends, but such is the earth; ergo, it hath ends. Therefore as the Scripture by the ends, sides, and corners of the earth, doth shew that it is not round; so doth it also by the stable foundations thereof, shew, that it doth not move.

Isaiah speaketh of the planting of the heavens, which you say, *51. 6.* May as well prove them to be immoveable, as that which followes in that Verse concerning the foundation of the earth. *Ans.* I perceive your case is desperate, for like a man that is sinking in the water, you catch hold of every thing that is next you, though it be weeds and such as cannot help you. For 1. by heavens here may be meant the Church, which is that Vine, that God hath planted with his owne right hand. 2. Though this word heaven were taken in its proper signification, yet the planting of heaven is a metaphor, out of which you can conclude nothing, but must spoile your Syllogisme with *quatuor termini*. 3. Nothing is properly planted but what hath motion in it; as trees, hearbs, and such like vegetables. This word then may intimate, that there is motion in the heavens; as the word (*foundation*) sheweth, that there is no motion in the earth; for it is very improper and dangerous for a foundation to move.

When the Scripture saith, *The earth is established: by this word* (you

you answer) *is meant onely the keeping of it up in the aire, without falling to any other place.* Answ. If the earth be established onely so, that it may not fall or be removed to any other place; what singular thing hath the earth, that is not in other bodies? for so are the heavens established, and every starre, that they shall not be removed out of that place or station which is appointed for them; so is the sea confined within its bounds, which it cannot passe. But there is something else in the earth whereby it differs from other bodies, and wherein Gods power is the more admired; to wit, *That it is so established, that it cannot be removed*: Nay, more then so, it cannot be stirred or wagged at all. Thus as Gods glory is admired in the perpetuall motion of other bodies, so is it in the perpetuall immobilitie of this. 2. *The earth (you say) is kept up from falling.* I pray you whither would the earth fall, being in its owne place, and lowest of all the Elements? if it fall any where, it must fall upward, and that is as proper a phrase, as if I should tell you, the heaven must mount downward: therefore, *Mitte hanc de pectore curam*; never feare the falling of the earth. The Gentiles were afraid that the heavens might fall being held up by the shoulders of *Hercules*; therefore *Artemon* it seemes was afraid of this, who never durst venture abroad, but under a brazen target, carried over his head. And one *Phenaces* in *Plutarch* was fore afraid, that the moon would fall downe, and therefore pitied the Ethiopians and others that were under the moone; but if he had knowne what you know, That there is a world in the moone, his feare had been just. It may be the great shower of stones that fell heretofore *in agro Piceno*, were the stones of some buildings that had fallen downe in the moone. We need not feare the falling of our earth, which God hath so established, that it cannot be moved.

Job. 9. 6.

You see no reason, but that we may prove the naturall motion of the earth from that place in Job, Who moveth or shaketh the earth out of her place; that is to say, We may prove a naturall motion out of a violent, or one contrary out of another; we may prove the fire to be cold, because it is hot; or that the earth may move naturally, because it moves violently. The motion that *Job* speakes of, is an earth-quake extraordinary, which is a violent and temporary motion, and of some part only; and a concussion rather then a motion; the motion that you would inferre from thence, is a naturall, perpetuall, totall, regular, and a circular motion. Will you inferre that because the mill-wheele is turned about violently, that there-fore

fore the whole mill is turned about naturally. I have seen a Church-tower shake when the bells have been rung; but if I should inferre that the whole Church therefore may move circularly, I should feare,

Nè manus auriculas imitetur mobilis albas:

lest I should be thought a creature of Arcadia. And I hope you are not so simple as to thinke that God did ever shake the whole earth out of its place; or if he had, that therefore it may move naturally and circularly.

CHAP. VI.

1. The earth is in the middle and center of the world, and why. 2. Hell is in the center or middle of the earth. 3. The earth lowest and basest, how. 4. Every thing is made questionable by some. 5. Aristotle defended. 6. The earth is in the center, because in the midst of the equinoctiall Horizon, &c. 7. The imagination must be conformable to the things, not these to it; the vanity of imagining circles. 8. Astronomers reproved, and their vanity shewed, chiefly about the bignesse of the stars. 9. The earth is the least circle: therefore the center, how understood.

HERE you will not upon any termes admit, that the earth is the center of the Universe, because our arguments (you say) are insufficient. *Answ.* Our arguments may be insufficient to you, who hath an overweening conceit of your selfe, and a prejudiciall opinion of other men. But our arguments have been hitherto accounted sufficient, by moderate, wise, and learned men; but to your sublimated understanding they give no satisfaction; there are some men that are never content, and nothing to them is sufficient, no not Gods owne word: but what though our arguments were insufficient? will you therefore reject them? You may by this meanes reject all humane learning, for it hath not that sufficiency which perhaps you require. We know here but in part, the sufficiency of knowledge is reserved for a better life. — *Si quid tamen aptius exit:* But if you have more sufficient arguments for your opinion, impart them to us, and we will imbrace them; if you have not, *visere mecum*; content your selfe with these till you know better. But you promise that you will cleerly manifest the insufficiency of our arguments in this Chapter. Let us see if you will be as good as your word, which we have not yet found in you; only, large promises without performance.

Larga quidem semper Drancetibi copia fandi.

1. We say that the earth is the center, not the sun; because the earth is lowermost, and under the sunne. To this you answer, *That*

since the sun is so remote from the center of our earth, it may be properly affirmed that we are under it, though that be in the center of the world.

Ans. That the sunne cannot be the center of the world, and that
 C. 1. sec. 2. the earth must needs be the center; we have proved against *Lansbergius*, for neither could there be Eclipses of the Moone, nor could we discern the medietie of heaven, nor of the Zodiac, if the earth were not the center. And whereas the center is the middle of the globe equally distant from all the parts of the circumference; the wise God placed the earth in the midst of this great systeme of the world, not onely for mans sake, who being the Lord of this universe, and the most honourable of all the creatures, deserved to have the most honourable place, which is the middle: but chiefly that man with all other animall and vegetable creatures, might by an equall distance from all parts of heaven have an equall comfort and influence. For imagine there were two earths, this which is in the center, and another out of the center; the influence and powers of heaven must needs more equally concur and be united in this, then in that: and if the place be it which conserves the creatures, what place more fit for conservation, then that which is in the midst of the world? Having an equall relation to all parts of heaven, and all the powers of the universe uniting themselves together in the earth, as in a small epitome. Therefore nature which is the hand-maid and initatour of God, layes up the seed in the middle of the fruits, as being not onely the safest part, but also because in the middle as in the center, all the powers of the plant meet together in the forming of the seed, wherein it doth perpetuate it self. How inconvenient and unhealthy were mans habitation, if it were neerer the heaven then it is? for the aire would be too pure and unproportionable to our grosse bodies, for they that travell over high hills find their bodies much distempered. *Acosta* witneseth, that they who travel over the high hills of Peru, fall into vomiting, & become desperately sick, and many lose their lives, by reason of the subtilty & purenes of the air. But your words would be a little corrected; For *since the sun* (you say) *is so remote from the center of the earth, we are under it.* Indeed we are under it, in that it is above us; but not for that it is remote from us, or from the earth. *Under* and *above* are relative tearms, so are *neerenes* & *remotenes*.

2. You slight the constant and perpetuall doctrine of the Church from the beginning, concerning the site of hell, which is in the center or bowels of the earth; and you call it an uncertainty; but

fo you may call any doctrine in Scripture, for where will you have hell to be, but either in heaven or in the earth? These are the two integrall parts of this universe; in heaven I hope you will not place it, except you will have it to be in the moone. But if there be any hell there, it is for the wicked of that world: as for the wicked of this world, they are not said to ascend to hell in the moone, but to descend to hell in the earth, as *Core* and his fellowes. Therefore it is called a lake, burning with fire and brimstone; *Abyssus*, a deepe gulfe; *Gehenna*, the valley of Hinnon. By *Tertullian*, *Theaurus subterraneus ignis arcani*, The treasure of hid fire under ground. The Apostle speaks of *καταχθόνιος* of those that bow to Christ under the earth. *Horrenda voragine*, fearfull gulfs they are, saith *Lactantius*. And that which you call uncertainty, is called *certa fides*, a sure faith, an undeniable truth by *Prudentius*:

Apol.c. 47.

Philip. 2.

L. 7. Instit.

c. 7.

Certa fides rabidos sub terra nocte caminos, &c.

De hamartigenia.

And as this hath been the constant opinion of the Church, as may be seen both in the Greeke and Latine Fathers, so hath it been beleevd by the Gentiles, as I could instance out of Greeke and Latine Poets of *Aëons*, *Tartarus*, *Phlegethon*, *Cocytus*, *Stryx*, *Acheron*: which they shew to be in the center or bowels of the earth; therefore I hope you are none of those that *Juvenal* speaks of, who would not beleve there was any hell under ground:

Esse aliquos manes, & subterranea regna, &c.

Satyr. 2.

Nec pueri credunt. —

For whosoever denied hell to be below, denied that there was any such place at all: as, *Pythagoras*, *Epicurus*, *Lucretius*, *Tully*, *Seneca*, *Lucian*, *Pliny*, and some others; to whom I may adde the Gnostickes, who held there was no other hell, but this world, whom *Irenæus* refutes. 2. As hell must needs be in the earth below, so must heaven the place of the blessed, be above all these visible heavens; which is called, *The third heaven, and the heaven of heavens*. Therefore, it is no uncertainty (as you say) that it is concentricall to the stars: for if it be not, tell us where you will have it? in the moone, or in the Elysian fields, or in Mahomets paradise? I wish you would thinke the dictates of Gods word to be more certaine then your groundlesse phancies, and that the Scripture is a more stable foundation to build upon, then the Moone. 3. It is not an uncertainty that places must be as farre distant in situation, as in use: Therefore *Abraham* saith, That there is *מְרוֹאֵי חַדָּקָה*, a great gulfe. or gap between *Lazarus* and *Dives*. So *David* distinguished between the height of heaven, and

Irenæus l. 5.

c. 31.

Psal. 139.

Amos 9.

Eſay 14. 13.

14, 15.

the deepe of hell; ſo doth *Amos*, and *Eſay*: and it's fitting that heaven and hell, the ſaints and the wicked, the joyes of the one, and torments of the other, be as remote as may be; which the Poet knew:

—*Tartarus ipſe,*

An. 6.

Bis patet in praeceptis tantum, tenditque ſub umbras,

Quantus ad aethereum caeli ſuſpectus Olympum.

3. Theſe things alſo you will have to be uncertaine. 1. *That bodies muſt be as farre diſtant in place as in nobility.* 2. *That the earth is of a baſer matter then other Planets.* 3. *That the center is the worſt place.* Anſw. Theſe are not uncertainties to men that have ſenſe

and reaſon; for ſenſe tells us, that the groſſer ſimple bodies are, the lower place have they in this Univerſe: the heaven being a quinteſſence and of the pureſt matter, is uppermoſt; next is the fire, then the aire, then the water, and loweſt of all, the earth, as being the groſſeſt; and reaſon tells us, that God is the God of order; and what a diſordered world ſhould we have, if groſſe and heavy bodies were uppermoſt, the light and pureſt bodies beneath? We ſee in our owne bodies, that the groſſer the ſpirits are, the lower they are: the animall having their reſidence in the head, the vitall in the heart, the naturall in the liver. 2. Nor is it uncertaine that the earth is of a baſer matter then the Planets; the obſcurity and dulneſſe of the one; the beauty, light, and ſwiftheſſe of the other, doe ſhew what oddes there is in the matter. How are all Divines deceived who put men in minde of the baſe materialls of their body; and teach that God made men of the baſeſt element to humble him? *Animalium ſuperbiſſimi origo viliffima*; and I thinke you are Planet-ſtruck, or have a planeticall head, who thinke the earth to be a Planet. 3. That the center is the worſt place, is not held by us; for though we ſay the earth to be the ignobleſt and baſeſt element, in reſpect of its matter, and therefore the loweſt; yet as it is the center and habitation of the nobleſt creature, it is placed in the middle, as being the nobleſt place.

Pliny.

4. Our ſecond argument is grounded (you ſay) upon two fooliſh foundations. 1. That the whole frame of nature moves round, excepting onely the earth. 2. That the whole earth is heavy, and more unfit for motion then the Planets: *Theſe you reject, becauſe they are* (you ſay) *the thing in queſtion.* Anſw. You are doubtleſſe that third *Cato* that fell from heaven; or *octavus Sapientum*. Our foundations of the earths ſtability, and gravity, are fooliſhneſſe with you;

you; so was the Gospell foolishnesse to the Gentiles; but you doe well to observe *Solomons* rule: *Answer not a foole according to his folly*; which is the reason that you answer not at all to these foolish foundations of ours; but onely with this; they are the thing in question. But if you question the stability and gravity of the earth, is not your question as foolish as our foundation? but seeing you may question every thing, every thing may be a foolish answer, or polition to you. And what doe you thinke of the Scripture when it saith; *The earth standeth fast, and the stars move*? doth the Scripture in this speake foolishly? Surely we are content to preferre the foolishnesse of Scripture to the wisdom of your scribbling; because such conceited wisdom is but foolishnesse with God. What foundation either in Divinity or Philosophy, what Article of the Creed hath not been questioned? shall they be counted foolish foundations, or unfit to discusse controversies, because they have been questioned by pernicious Heretickes? If you were as wise a man as you pretend your selfe to be, you should have with solid arguments refuted our foundations, which are so fully demonstrated by so many Philosophers, and then you should have shot your fooles bolt. The truth of these foundations I have shewed already, to which you answer nothing, therefore here I will not
actum agere. *Contra Lansberg.*

5. Our third Argument is, That our earth must be in the center, because it is in the lowest place, or middest of the world; this *Aristotle* proves by the descending of all heavy to the center, and the ascending of light bodies from it: *But you reject Aristotle as being a master of Syllogismes, and being deceived whilst he supposeth that, which he pretends to prove.* But indeed you are much deceived your selfe, whilst you reject this master of Syllogismes, who doth not suppose what he pretends to prove, but substantially proves, what you thinke hee supposeth. Hee saith the earth is the center, and thus syllogistically out of him it is proved; To what place heavy bodies descend, that place is the center; But to the earth, heavy bodies descend; *ergo*, the earth is the center. You see now that this master of Syllogismes doth not suppose that which he brings unto the conclusion, but proves the earth to be the center by a *medium*, which you cannot answer: so that being put to your shifts, you know not how to elude the force of this and other arguments; but by falling to your art of multiplying centers and circumferences, which is not difficult to you, that can multiply worlds. And be-
cause

cause you cannot be so impudent as to deny the ascending of light bodies ; you say, *That they ascend to some circumference which we cannot reasonably affirme to be concentricall with that of the world.* But I would know of you, how you can reasonably affirme that circle to be eccentricall , which we sensibly perceive to be concentricall to the world ? If neither you nor we can perceive that circumference to which light bodies ascend eccentricall to the world, what reason have you to affirme it ? or how doe you prove what you affirme ? May you not as well tell us , that there are more suns then this one which we see ? For you will say that we cannot reasonably affirme there is but one sun. But you say, *We cannot prove the descent of heavy bodies to the center, nor the ascent of light bodies to the circumference of the world ; because all our experience in this kind, extends but to things that are on earth, or in the aire above it.* I pray you good Sir, how farre doth your experience reach beyond ours, that you should deny this our assertion ? Have you beene in the moone, and observed that which we cannot finde here below ? We see *quantum acie posunt oculi servare* , as farre as our eyes will give us leave ; to wit, light bodies mounting from the center towards the circumference ; doe you see otherwise ? I know you doe not , and cannot though you had as many eyes as *Argus* : therefore keep your wilde opinions to your selfe, for so long as you can neither by sense nor reason perswade us , your bare word will be too weake an argument to worke upon our beliefe. You conclude , *That it were a senselesse thing, from our experience of so little a part , to pronounce any thing infallibly concerning the scituation of the whole.* I grant our experience to be little , but yours is lesse , or none at all : a little is better then none, and we may more boldly inferre , that there is but one center, and one circumference ; (because all light things ascend to one circumference, and all heavy things descend to one center) then you can inferre two centers, and two circumferences ; whereas you never knew any light thing ascend, or heavy thing descend to any other circumference and center, then to these which we maintaine : are not you therefore much more senselesse then we ? for we follow the direction both of our sense and reason ; so doe not you.

6. Our Astonomicall reasons you refell as wisely as you have done the rest : for you grant us, *That the earth is in the midst of the equinoctiall, horizon, and other circles ; but you deny that from hence can be concluded that it is in the center of the world.* It seemes then that the equinoctiall, &c. are not concentricall to the world , and that the earth

earth may be in the midst of the horizon and equator, though never so much distant from the center; and what is this but to make another world? consisting of another heaven and earth? For if this earth be under any other equinoctiall besides that of the *primum mobile*, or any other horizon, it cannot have the heaven equally on all sides of it, and so cannot be in the lowest place which is the center, though it be the heaviest body; and so against its nature must be higher then that body which is in the center. This is to take away that order which God hath placed in the creatures, to multiply worlds, and to bring in a strange confusion. And what a wise reason doe you give us why the earth would remaine in the midst of these circles, that is, the equinoctiall, &c. though distant from the center; *because it is the eye that imagins them to be described about it*? So then the earth doth not goe out of the midst of these circles, because the eye imagines them, &c. You have a strange fascinating eye, that can keepe the earth within its circles; if you should winke; or if you lose your eyes with your great patron *Democrius*, would not the earth give you the slip and fall out of your circles into the center of the world? Besides, I had thought that the action of the eye had been to see, not to imagine. As you have made a confused Chaos in the great world, so you doe in the little world too, confounding the inward and outward senses, the sight and the imagination: I thinke you were begot of *Chaos* and *caligo*. Againe, what a reaching eye have you, that can describe circles about the earth? If you had spoken of an artificiall Globe, you had said something; but if your eye were as big as that of *Polyphemus*,

Argolici clypei, aut Phœbæ lampadis instar,

yet you could not describe with your eye a circle about the earth: your imagination may describe it, but not your eye: your imagination cannot be the cause why the earth remaines within its circles; your imagination must be conformable to the reality of things, and not they to your imagination: for though you imagine that there is a world in the moone, that the earth moves, &c. yet there is no such thing, because the earth is in the center: wee imagine it to be so, and beleeve it also; but our imagination or beleeve do not make it to be so; therefore, our collection is not weak when we inferre that the earth is in the center, because it is in the midst of these circles which are concentricall to the world; or because the parts and degrees of the earth doe answer in proportion

to the parts and degrees of heaven, which they could not well doe if the earth were eccentricall.

7. Now I thinke you go about to conjure us with your figures, circles, and characters, and to hem us in with a circle made by your pen, as *Popilius* the Roman Legate did inclose King *Antiochus* within a circle made with his rod: you remove the earth from one center to another, with more facility, then *Archimedes* could have done with his engine: you transerre the starres from one circle to another at your pleasure; you can doe I thinke as she in the Poet,

Sistere aquam fluviis & vertere sidera retro;

and all this stirre is to informe us, that though the earth be never so farre distant from the center of the world; yet the parts and degrees of your imaginary spheare about it will be alwayes proportionable to the parts and degrees of the earth. And what of all this? You may imagine what spheares you will, and in your imagination place the earth as you will, yet the earth standeth fast for ever in this great fabricke of the world as the center, though in your head it move to and fro. You may place the earth upon the top of the *primum mobile*, and imagine a spheare about it, with proportionable degrees, and parts to those of the earth; wee may retort these words upon the sunne your center, that though it be never so farre distant from the center of the world, yet the parts of an imaginary spheare about it will be proportionable to the parts of the sun: but though in your imaginary circle there be a proportion of parts and degrees to the earth removed from the center, I would know if the earth therefore is removed from the center: Or if you should temove the earth ten or twenty degrees neerer the pole *Articke*, or to the *Zenith* of the *Meridian* from the center; is there, or can there be any proportion between the two hemispheres? Will not the one be so much the lesse, by how much the other is enlarged? Or can the true spheare of heaven be divided equally into twelve parts, or signes, so that sixe be alwayes above the earth, and sixe below? Or can the stars in both hemispheres appeare of the same bignesse? Doubtlesse though you make a proportion in your imaginary spheare, to your imaginary earth, in your imaginary center; yet there can be no proportion between the reall spheare of heaven, and the reall earth, which is the reall center of the world: if it should be removed from its place where it is, your imaginations then are but the images, phanxies, and toyes of your head, without ground or solidity; therefore they are neither so strong, nor we so weake, as that they should

should make any impression upon our beliefe, as the mothers imagination doth upon the tender Embryo in her wombe.

When you are pressed with the manifest absurdities and inconveniences which arise from removing of the earth from the center of the universe, you have no other way to escape, but like a hedgehog, to shrink back into your imaginary globe or circle: for you grant that the earth must needs be placed both in the axis and æquator; *but that must be in the center of the sphere which you imagine about it, and not in the midst of this universe.* But why must the earth be removed from being the center of the universe, which by sense, reason, daily experience, and continuall observation of Astronomers, is knowne to be the center? Why I say must it be removed from its owne reall circle, to your imaginary circle? What inconvenience will follow in the world, if it remaine the center of the universe? Or wherein shall the world be bettered, if it be removed to your supposed circle? Nay, what absurdities will not follow upon this removall, which you will never be able to avoid for all your starting hole? for whereas you say, *That though the earth were as far distant from the center, as we conceive the sunne to be, yet it may be still situated in the very concurrence of the axis and aquator.* Truly, though we should conceive it to be so farre distant, yet it would not be still in the concurrence of these two lines; for if either the sunne or the earth were there still, there would be a perpetuall equinox through the world, neither would there ever be any increase or decrease of dayes and nights.

Now you present unto us a Scenography or plat-forme of your imaginarie world, in which, like another *Joshua*, you make the sunne to stand still, so that here is a perpetuall solstice; if that *American* (who would not acknowledge the sunne for a god, because it never rested) had seen your sun, or had known of him what you know, he would have recanted his opinion. What fooles were the Poets to bestow so rich a chariot, and foure prancing horses on the sunne, who could make no use of them? they should have bestowed this gift upon the earth, for she it is that undertakes all the toile, and *rejoyceth as a Gyant to run her course.* *Ovid's* second booke of *Metamorphosis* must be mended, and *Phaeton* must preferre his petition to the Earth his mother, and not to the Sun his father; except perhaps in those dayes the Sun did travell about the Earth, but now being wearie to go about so often, and to take such paines for her thanklesse inhabitants, hath given over this toile, and hath

The new Planet no Planet.

left the earth to shift for her selfe and children. The reason why you present this figure to us, is to let us see, *That though the sunne be in the center, and the earth in the suns orbe, yet that there can be no Eclipse, but when the sunne and moone are diametrically opposite.* But here your opinion is diametrically opposite to the truth, for the line from the center to the circumference, is but a semidiameter; and indeed the sunne is distant from the moone in your figure, nothing neere a semidiameter, and yet your moone is eclipsed. But what a mishapen world have you made us? in which you have placed the sunne lowermost, and the earth above the sunne, and hath made such a vast circuit for the earth, and such a little circle for the moone. You told us afore, that the earth drawes about the moon, but in your figure it cannot be so; for you have made the earth to compasse the sunne round; but the moone to fetch a compasse of her owne aside off from the sunne: so that whereas you have placed the earth in *Aries*, she is between the sunne and the moone, but when she comes about to *Libra* the opposite signe, then the sunne will be between the moon and her. This is indeed a strange world, and doubtlesse none of Gods making; I wish I were out of it, for I am wearie and sorrie to spend time in refuting of such toyes.

You doe well to confesse the uncertainty of finding out the exact distance of the firmament, which is but conjecturall according to mens fancies, and so indeed are the motions, and magnitudes, and number, and order of the spheares, and starres; about which Astronomers have so many digladiations and oppositions, which were tedious but to name. From their conjectures and uncertainties have proceeded such a number of conjuring words: as, Trepidations, Retrogradations, Excentricities, concentricities, Epicycles, Accessions, Recessions, and I cannot tell what; so that as *Cato* said of Sooth-sayers, I may say of Astronomers, It is a wonder that they do not laugh at one another. The best of them all are but

Cum ve in terris anima, & coelestium inanes:

They gaze and stare on the stars, and dispute, and assever with great boldnesse, that each star is of such and such a bignesse and altitude, and that they move thus and thus; and that there be so many of each magnitude: and so expert they are, and quick-sighted in these things that are so remote, and yet cannot perceive the things that be hard at hand: therefore *Anaximines* gazing on the stars, fell in the ditch, and was checked by his maid for his curiosity in things beyond his reach, and neglecting that which most concerned him.

Saint

Saint *Ambrose* complained of the Astronomers of his time, that they were busie in measuring of the heaven, in numbering of the stars, but carelesse of their salvation; that was indeed, *Relinquere causam salutis, erroris querere*. Even like the Pharisees whom Christ reproves, That they could discern the face of the skie, and of the earth, but could not discern the time. Saint *Austin* preferres that man who is conscious of his owne infirmities, to him that is curious in the speculation and scrutiny of the stars: *Laudabilior est animus cui nota est infirmitas sua, &c.* Even in the opinion of *Socrates*, it's *παράφρονισσι*, to be mad, to inquire curiously into these celestiall things, which are *μὴ ἐν πεδίῳ*, not to be found out by us; *Furiosi dementesque sunt iudicandi*, they are furious and mad men, &c. saith *Lactantius*. I will not condemne the good uses that may be made of Astronomy in calculation of times, observation of seasons, prediction of eclipses, and such things as have their immediate dependence from the opposition and conjunction of starres; and the uses that may be made of it in physicke, and in the campe: but that which I reprove, is the vaine curiosity of men, who cannot be content to know with sobriety things revealed, must needs with *Phaeton* and *Icarus* meddle with these heavenly bodies, in vaine and curious speculations; the knowledge whereof in this life is denied us, as being a part of *Adams* punishment for his affected knowledge, and being a meanes for us to have recourse to Christ, in whom are hid all the treasures of wisdom and knowledge. Therefore, for their needlesse paines, and presumptuous curiosity, God doth punish them with multitudes of contradictory opinions. Who can sufficiently laugh to heare their jars and dissensions, saith *Theodoret*? for their difference is not about the measuring of an acre of fide. ground, but of the whole world. Now (saith the same Father) who can measure the whole earth! *τίς ἀπάσαν μέτρον ἀν περιλάβοι τὴν γῆν;* God himselfe asketh *Job*, *Who is it that hath laid the measures of the earth, and who hath stretched the line upon it?* and he asketh him, *whether he hath perceived the breadth of the earth*, *Ver. 18.* intimating hereby, the impossibility thereof; and shewing what difference there is between Gods knowledge and mans: saith Saint *Chrysostome* on that place; *Αὐτὸς τῶν διδασκεῖ αὐτὸν τὸ μέτρον αὐτῆς καὶ ἐκείνη.* For God (saith the same Father) will let *Job* see how much man is inferiour to him, in that not onely hee cannot doe the workes that God hath done, but also that he hath not the knowledge of them. As it was Gods proper worke to make the earth, so it is proper to him alone

Luke 12.36

L.4. De triu.
In Procm.
in Xenoph.L.3.c.c. De
fals. sapient.

Serm.1. De

Job 38.5.

Verse 33.

to know the measure of it : if then we know not the earths measure which is but a point in comparison of heaven , what madnesse is it to measure the heavens, or to define the motions, scituations , altitude, densitie, or other accidents of them unknowne to us ? This is, *cælum ipsum petere stultitia*. Knowest thou the ordinances, (or as some translations have it) the conversions of heaven? saith God to Job. The Psalmist tells us, that it is only he that numbereth the stars, and calleth them all by their names. He bids Abraham tell the starres if hee could, shewing that indeed he could not.

8. From hence appeares the vanity of your side, who thinke, *That the Stars would seeme no bigger to us then they now are, though our earth were neerer to them by 20000000. Germane miles, which is granted to be the diameter of that orbe wherein the earth is supposed to move.* I pray how come you to know this ? by relation, or revelation, or reason, or experience ? or have you dreamed it ? *Qui amant ipsi sibi somnia fingunt.* Or doe you know it by the help of a perspective ? You tell us, that the better the perspective is, the lesse it makes the stars to appeare ; if my spectacles were of that quality, I could sling them away, and truit to my owne eyes : I wish you could tell us, how many Germane miles would suffice to finde out the true bignesse of the stars ; or in how many yeares will the bodies of the Saints be in ascending to heaven ; you must pardon us if we beleeve not what you say, such an infinite disproportion doe you make both betweene the bignesse and distance of our earth and the fixed stars. *And though we will not thinke elephants and whales to be fictions and chimara's, because they are bigger then mice ; yet if you should tell us of a whale that were as big as the Ile of Saint Laurence, or of great Britaine ; and of an elephant that were able to overturne the Alpes with his trunk ; or of a Camell that had a bunch on his backe as high as the cape or top of Tenariff, we would laugh sooner then beleeve such monstrous absurdities.* And yet the disproportion of these supposed creatures to mice is nothing, to that of the earth and fixed stars. *And th: like credit doe we give to that incredible celerity of the eighth spheare, of which Astronomers write, and to the rest of their conceits concerning the reaching of the suns orbe to the pole starre ; and that the circle of the pole star is above foure times bigger then the orbe of the sunne ; and that the semidiameter of the earth, makes little or no difference in the appearance of the sunne ; as if the observations from the center and surface, were of the same exactnesse.* Whereas, never any man hath been in the center to know this, neither doe the Astronomers agree.

agree amongst themselves about the compasse and diameter of the Earth; *Aristotle, Hipparchus, Eratosthenes, Ptolomy, Alphragan, Fernelius*, and the later Professors of that faculty, being all of different opinions; so that many Astronomicall principles are grounded upon meere uncertainties.

2. Wee doe not ground our argument (as you say) upon this supposition, *That every body must necessarily be of an equall extension to that distance from whence there doth not appeare any sensible difference in its quantity, as you instance in a Bird, and a Tree: as that the Tree should be accounted by us forty paces thick, because wee approaching neerer to it by forty paces, doe not finde any sensible difference.* This is a crotchet hammered in your own head, but never supposed by us.

3. Wee grant with you, *That it is presumption to conclude that to be superfluous, whose use wee understand not*; but yet wee must needs say, That what is not usefull at all, is superfluous; as that immense and stupendious bignesse, and incredible distance of some starres, seeing they were made for the use of man onely; (for to what other end should they be made?) whereas if they had been neerer and lesser, they might have been more effectuell: Therefore wee cannot beleve you that they are of that bignesse and distance you speak of. And as for other inhabitants, beside those that are upon this earth, by whom (as you say) these lesser stars may be discerned, I have nothing now to say to them; I think you mean your men in the Moon, of whom perhaps I will speak hereafter: and as for these small stars, which you say are lately discovered; I grant that they were made for mans use, though they be scarce discernable; for their influence may be great, though their light be small: and we have by them occasion to see how one star differeth from another star in glory, and we may admire Gods greatness in the least, as well as in the biggest; therefore he hath made Flies as well as Eagles, and Mice as well as Elephants.

9. You chafe as if you had been stung with nettles at an argument of mine against *Lansbergius*, who held, as you doe, that the Sun was the center: my argument is this; That which is least in a circle ought to be the center of it; but the earth is farre lesse than the Sun, and the terrestriall Equinoctiall (*secundum te*) according to your owne words, is the least of all the circles, &c. *This (you say) is so simple, that every fresh man would laugh at it, and it would make one suspect, that hee who should urge such an argument, did scarce understand any thing in Astronomy.* *Ans. 1.* For any great skill that either you or I have in Astronomy, wee may shake hands: A-

astronomy is not my profession, yet so much I have as is convenient for a Divine, and enough to discover your vaine and ridiculous conceits; and I have not the lesse because of your suspicion: I understand so much as that I dare say there be many absurd and foolish fancies taught by Astronomers, though the science it selfe be usefull in many things. 2. If you, or your fresh men laugh at this argument, you will shew that you have little salt in you, especially that salt whereof the Apostle speaks. 3. You shewed more malice then knowledge, more ill-will then skill, in repeating my argument; for you left out (*secundum te*) that is, according to your owne words; which sheweth that these were the words of *Lansbergius*, not mine; to wit, *The terrestriall Equinoctiall is the least of all circles*: So that you cunningly would derive the ignorance and simplicity of your Champion upon mee, whereas I spake in his owne tearmes. 4. I did not speak of the earth, as it had relation to the Moon, or *Mercury*, but in reference to the Sun; for I say that the earth is lesse then the Sun, and therefore fitter to be the center then the Sun, as *Lansbergius* would have it. 5. There is no certainty amongst Astronomers, whether the Earth, Moone, or *Mercury*, be the least spheare. 6. I said, *minimum in circulo*, not *circuli*; that which is least within the circle, not that which is the least part of the circle. The Moon, and the rest of the Planets, are the thicker parts of the spheares, so is not the Earth, it is no part at all of any sphear, but it is within the sphears; therefore the Earth, not the Moon, is fittest to be the center. Thus you have made mee say more now, then I did before. You had no reason then to put so much vinegar in your ink; but you are a namelesse Moon-man wrapt in a cloud:

Cernere ne quis te, ne quis contingere possit.

But be not so high conceited of your selfe; though your habitation be in the Moon, yet learn humility;

Tecum habita, & noris quàm sit tibi curia supellex.

As for the other Objections, which you say are not worth the citing, are indeed such as you know not how to answer them; therefore you slight them, as the Fox did the grapes, which he could not reach.

CHAP. VII.

1. The Starres have not their light because the Sun is in the center, nor hath the Sun lesse light being out of it. 2. Why the Earth in the center. 3. The Sun is not the center, because the Planets move about him. 4. The center is not the most excellent place, neither

they are the best things next it or in it. 5. There is an harmony amongst the Starres, though the Sun be not in the center.

IN this Proposition you say, *That the Sun may be the center*; and you tell us of *deformities, wheeles, and screws, as if Nature in framing of the world had been put to such hard shifts* by Ptolomie's and Tycho's Hypothesis: But indeed the wheeles, and screws you speak of, are the whirl-gigs of your own head; and I hope your Creed is, that not Nature, but the God of Nature, framed the world: but let us consider the weight of your arguments, by which you would prove Copernicus his Assertion.

1. You say, *That the light which is diffused in the starres, is contracted in the center, which can onely be by placing the Sun there*: so then it seemes by you, that if the Sun were not in the center, the light of the starres could not be so eminently contained and contracted in the Sun: either you must mean that the starres could not receive so much light as they doe from the Sun, or else that the Sun could not have in himselfe so much light as hee hath, if hee were not in the center: But both these are frivolous whimsies; for neither hath any starre its light, because the Sun is in the center, (as you would have) nor would the Sun lose any of his light, if he were out of the center, no more then a candle can lose its light, though it be not placed in the midst of the roome. Now, whether the light of the starres be all one with that of the Sun, or any parcell of it, is not yet fully resolved. In your next Edition tell us more plainly what you meane by the light in the starres contracted in the center, and wee will give you a more satisfactory answer.

2. Because *Clavius* and others say, *That the Sun was placed in the midst of the Planets, that hee might the more conveniently distribute his heat and light amongst them; the force of this reason* (you say) *may more properly prove him to be in the center*. I answer, that it will rather prove the Earth to be in the center thus: The Sun is in the midst of the Planets, that they may the more participate of his light; so is the Earth placed in the midst and center of the world, that the Sun might the more conveniently distribute his light and heat to it: for the Sun was made chiefly for the Earth's sake, and the inhabitants thereof; neither doe the stars so much need his light and heat as we, without which we can neither live, nor procreate: and as it is questionable whether the stars receive their light from the Sun, (though the Moon doth) so is it much to be doubted that they receive no heat from the Sun, seeing *Saturne* is cold; and the Sun's heat comes
by

by reflexion, which cannot be in the starres.

3. You say, *That the Planets move about the center of the world, and that I grant you; but Saturne, Jupiter, Mars, Venus, Mercury, move about the body of the Sun; ergo, the Sun is in the midst of the world.*

Answ. If you had been better acquainted with the master of Syllogismes, you had not framed such a lame Syllogisme as this; for thus it runnes in briefer tearmes; some Planets move about the center of the world, some Planets move about the Sun; *ergo*, the Sun is the center of the world. Besides, that it consists all of particulars, the conclusion is falsly inferred against the lawes of the third figure; for it should be formed in the first figure thus: What moves about the Sun, moves about the center of the world: the Planets move about the Sun, *ergo*, they move about the center of the world; and all this I grant you, that the Planets move about the earth which is the center: now then I hope you will not say that the Sun is the center of the world, because the Planets move about him; no more then *Jericho* was the center of *Canaan*, because the Priests went about it.

4. When you tell us that the revolution of *Venus* and *Mercury* is about the Sun, because they are never at any great distance from him: you alledge a cause fit to be laughed at; for is the vicinity of one starre to another, the cause of its revolution about that starre? because the mill-wheele is not farre distant from the miller, doth it therefore goe about the miller?

5. The reason which you alledge from *Pythagoras* is also weak, for though the sunne in respect of his light were the most excellent body, and the center the most excellent place, yet it will not follow that he is there; for we see that the most excellent creatures are not placed still next the center or in it, but farthest from it: as man is placed in the superficies or circumference of the earth, and not in the center of it; the heart is not in the midst of the body; if the middle or center were alwayes the fittest place for a luminous body, God would have commanded *Moses* to set the candlestick with the lamps in the midst of the tabernacle, and not in the side of it: our eyes had beene placed in our navels, not in our heads. And albeit *Plato* say, that the soule of the world resides in the innermost place of it, yet I hope you doe not by this understand the sunne; and you did well to alledge *Macrobius* against your selfe, in comparing the sunne in the world, to the heart in a living creature; for as the heart is not in the center of the body, neither is the sun in the cen-

ter of the world. But you give us a profound reason why in living creatures the chiefest part is not alwayes placed in the midst, *because they are not of an orbicular forme as the world is*; then it seems that the outward figure is the cause why the best part is not placed in the midst. What thinke you of a Hedge hog when he wraps himselfe up in his prickles as round as a bowle, is the best part then more in the middle of his body then it was before? Or hath the earth which is of a round forme better things in the center then in the superficies? What difference is there betweene the middle and out-side of a round stone? Again, you say, the center is not the worst place, although *Aristotle* proves it from the dignity of the thing containing over that which is contained; and your reason is, *That though the center be contained, yet it is one of the termini or limits of a round body, as well as the circumference*: but I reply, that though it be one of the limits, yet it is contained, and therefore more ignoble then that which containeth it; so you have but offered to answer this argument, and indeed you know not how to answer it.

6. *If we suppose the sunne to be in the center* (say you) *we may conceive an excellent harmony, both in the number and distance of the Planets*. For my part I give you leave to conceive what you will, so that you doe not obtrude your conceits on us as oracles, but will keep them to your selfe; if you continue to divulge them, we will conceit that your conceits are but idle phansies, if you cannot set them forth with better proofes then as yet you have done. We are confident the earth is in the center, and doe conceive that there is an excellent harmony in the Planets, though the sunne be not in the center; and therefore to say that the harmony would be disturbed if the sunne were amongst the planets, you wrong both *Pythagoras* your master, whose conceit of the musicall harmony in heaven was grounded on the motion of the Planets; and injurious to *Apollo* himselfe the author of musicall harmony, and the continuall companion of the Muses, without whom there can be no comfort.

CHAP. VIII.

1. *How the eye is deceived, and how not; and that if the earth moved, we should see it.*
2. *Motion and rest how the objects of the eye, and of the common sense.*
3. *If the earth moved, the clouds would but seeme to move as well as the sunne.*
4. *How the eye can be deceived in the motion of a lucid body.*
5. *The naturall motion of the foundation cannot keep buildings from falling.*
6. *The heavens fitter for motion then the earth.*
7. *Rugged bodies not fittest for motion.*
8. *The sight hindered by the motion of the subject, medium, and object.*
9. *One simple body hath but one naturall motion, proved.*
10. *Essen-*

10. Essentiall properties more chiefly in the whole then in the parts, the earth is heavy in its owne place how, bignesse how a hinderance to motions, of the earths ineptitude to a swift motion. 11. The magneticall qualities of the earth, a fiction. 12. Similitudes no proofes; the seas ebbing and flowing, what. 13. The whole earth moveth not, because the parts move not round. 14. Absurd phrases; and the spots about the sunne, censured. 15. Th. t the earth turnes about the moone is ridiculous. 16. Some observations to prove that the earth turnes about the clouds, refused. 17. Of a mixed motion, of the place, medium, and space. 18. Of the motion of comets. 19. My nine arguments defended. 1. That the earths motion would make it hot. 2. The aire purer. 3. A sound. 4. Heaven hath all things fit for motion. 5. Of similar parts and the whole. 6. The sunne is the heart of the world. 7. It workes by motion. 8. The earth is the firme foundation. 9. The authority of Divines; the heaven called *Aether*; the earth hath not two distinct motions.

THe chiefe businesse of this Chapter (you say) is to defend the earths diurnall motion. Indeed you are too busie; *Non amonimium diligentes*: neither is this businesse of yours any thing else then idleness, *otiosi negotium*. And because you cannot answer our objections, you are as busie here as you can be to illude them, and to delude the world with your great brags & Rhodomontado's; but let us see with what dexterity you dissipate the strength of our arguments; you doe as *Cacus* did to *Hercules*, *Cacus* being too weake to resist that invincible champion, laboured to escape his hands by darkening the cave, and *Hercules* his eyes with smoake and ashes which hee belched out against him: the like stratagem you use with intricate words and smoakie phrases to darken the understanding of the Reader.

1. We objected, that if the earth did move we should perceive it; you answer (but in many intricate and ambiguous tearms which were tedious to relate) That the sight judges of motion deceitfully; your reason is, because motion is not the proper object of the sight, nor belonging to any other peculiar sense: and that the common sense apprehends the eye it selfe to rest immoveable, as when a man is carried in a ship. *Answ.* The sight is oftentimes deceived, either in respect of the distance of the object, so the stars appeare lesse then they are; or in respect of the agitation of the object, so a square thing seemes round being swiftly turned about. 2. In respect of the indisposition of the medium, and so the Planets rising and falling seeme biggest, the aire being thickned. 3. In respect of the organ, when the eye, optick nerves, or vivive spirits are disturbed, vitiated, indisposed, or agitated, and so things that rest seeme to move, because the eye moveth; for that apparent motion is not the object of the eye, as a true motion is, but

but as it were the effect of the eye moved. So then, tell us the cause why we cannot perceive the earth move, seeing it moves with such a stupendious swiftnesse? You cannot say that the distance of it, nor the indisposition of the medium are the causes; the eye then must be the cause. But are all mens eyes from the creation till now so disturbed, or agitate with an insensible motion, that they cannot perceive the earth nor any part of it to move, and yet doe perceive the sunne to move? What? will you make God so defective in his work of mans body, as to give him such eyes which shal continually delude him; neither shall they ever apprehend their object, though never so neere; or the medium, though never so well disposed? Or will you make him so envious, as to give us such eyes, by which we should receive the knowledge of visible objects, and yet cannot see them when they are so neere us? This is the curse of the Sodomites, who could not see *Lot's* dore though they were close by it. Your simile of the ship will not hold; for though it be true that the shore apparently moves when the ship removes, yet we see and feele the true motion of the ship, as well as we see, or rather seeme to see the apparent motion of the shore. When I have beene in a ship, I have observed by looking on the mast how swiftly it is moved from the shore; but being on the shore, and looking upon trees, I see no other motion in them then what is caused by the winde. When I am in a ship, I perceive the motion of the other ship that saileth by me, though the motion of both be equall and uniforme: but when I am in an Island, I can neither perceive the motion of it, nor the motion of the other Island that is by it. And although the motion of the eye makes a thing seeme to move which doth not move, yet it doth not make the thing seeme to move which doth really move, if it be within distance: for being in a ship I have discerned the running of horses and carts upon the shore really, though the shore it selfe moved apparently; therefore, though I should yeeld that the earth did move, yet that motion could not make me thinke that the sun did not move really, no more then the motion of the ship can hinder me from discerning the true motion of a horse or wheele on the shore; and albeit, motion be not the proper object of the eye, yet it is an object; neither is the eye more deceived in apprehending or receiving the species of motion, then it is in receiving the species of colours, *ceteris paribus*: the action of the eye, or passion which you will, being no other towards the motion of a coloured object, then towards the colour of a moving object. Again, it would be

considered, whether the naturall motion of the earth (as you call it) and the violent motion of a ship produce the same effect in our eye ; as because the moving of a ship makes the shore seeme to move, therefore the moving of the earth makes the sunne seeme to move.

2. Your words seeme to be contradictory when you say, *That motion is not the proper object of the sight, nor belonging to any other peculiar sense.* We say that colours are the proper object of the sight, because they belong not to any other peculiar sense, and that motion is not the proper object of the eye, because it doth belong to other peculiar senses : but your other words are false, when you say, *That the common sense apprehends the eye it selfe to rest immoveable.* For when the eye is moved, the common sense apprehends it to be moved ; and so when it rests, the common sense apprehends it to rest ; otherwise, it and the imagination should be still deceived. But when you say, *That the eye is an ill judge of naturall secrets,* you should have said, That it is no judge of naturall secrets ; for the visible workes of nature are no secrets ; natures secrets are invisible, and therefore are judged by reason, not by sense. Now, though this be a good consequence, the earth doth not move, because it doth not appeare so to us, yet this consequence will not hold, the earth doth move, because it appears to move : for an object that is immoveable may seeme to move, because the eye is moved ; but when we see a great body neere us, to stand still, wee justly inferre that it moveth not, because we see it not. For the apparent motion of the shore, there is a manifest cause, but for the apparent rest of the earth there can be no cause ; for if it did move it would not seem to rest, being there is no cause, not so much as imaginable of this supposed rest, but rather the contrary ; for if it did move, it and all things else would seeme to move : as for the apparent bignesse of the sunne and moone, I have already told you a reason, but you have not, nor can you tell mee a reason for the apparent rest of the earth.

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2. I objected, That if the motions of the heavens be onely apparent, that then the motion of the clouds would be so too : your answer is, *That I might as well inferre, that the sense is mistaken in every thing, because it is so in one thing.* *Ans.* You should have rather inferred, that as the sense is mistaken in one thing, so it might be in any other thing ; but I will stand to your illation, the sense is mistaken sometimes in every thing, when it is mistaken in one thing of the same kinde : the eye is mistaken in the bignesse of one star, and

and so it is in the bignesse of every star, because the reason or cause of the mistake is alike in all, to wit, the distance. The eye is mistaken in the motion of one tree or house upon the shore, and so it is in all the trees and houses it seeth on the shore; for the reason of this mistake is alike in all, to wit, the agitation of the eye: even so if the heavens move apparently, the clouds also move apparently; *Nam in horum motu potest decipi visus, non minus quam in motu celorum*: these are my words which you cunningly left out. The eye^{6.1.} is deceivable in the one as well as in the other, therefore, my eye being alike disposed (in respect of its agitation, by the supposed motion of the earth) to the heavens, and to the clouds, it will follow, that as it is mistaken in the one, so it is in the other; and consequently wee must no more trust our eyes in the motion of the clouds, then in the motion of the heavens, if the earth did move. Therefore, what you speake of *Anaxagoras* his opinion concerning the blacknesse of the snow, is fit for your selte: for to hold the snow to be blacke, and the earth to move, are both alike absurd and ridiculous; but this opinion is more dangerous then that. As for your conceit of the common sense, conceiving the eye to be immoveable, I have said already that it is false, and indeed the opinion of one that seems to want common sense; and as boldly without prooffe doe you affirme, that the clouds, though they seeme not to move, are carried about with our earth by a swift revolution; for so you make the inferiour bodies against that order that God hath placed in the world, to move the superiour: as if you should say, The foot originally moves the head, and not the head the foot. *But this is no hinderance* (you say) *why we may not judge aright of the other particular motions.* It is true, I judge aright of the particular motions of the clouds, when I see them carried to and fro by the winde, and so I judge aright of the motion of the sunne; but when I see the sun and a cloud moving from East to West, and you should tell me that the sunne doth not move, though the cloud doth move, I would know the reason why my eye should be more deluded in the one then in the other; seeing the motion of the earth, and so of my eye, is alike disposed to both. It is as much as if you would tell me, when I see a horse and a man run both on the shore, that the man runs, but not the horse, whereas my eye is alike disposed to both. *As for your similies of a man walking in the ship, and of the moving of the oares, they will not hold:* for it is true, that though the banks seeme to move, yet it will not follow that my friend doth but seem

to walke, or the oares seeme to move, when as they move truly; the reason is, because the motion of the ship is no hinderance to the sight of that motion of my friend, or of the oares, being so neer to my eye; although that same motion of the ship is a hinderance both to the sight of the earths stability, as also of the motion of such things as be afar off: for a horse a great way off on the shore running, will seeme to me a bush moving with the trees and bankes; even so the motion of the earth may as well delude my eye in the moving of the clouds, as of the sunne.

3. I said that the eye could not be still deceived in its sight or judgement of a lucid body, which is its prime and proper object; Your answer is, *That the deceit is not concerning the light or colour of these bodies, but concerning their motion, which is neither the primary nor proper object of the eye.* *Answ.* The motion of the sunne as you take it, is no wayes the object of the eye; for it is *non ens* in your opinion: What is apparent, is not, *quod videtur non est*; a seeming motion is no motion, and therefore no object. 2. I said that a lucid body was the eyes object, the light it selfe, *objectum quo*, or the cause that bodies are discernable by the eye: now what probability is there, that the eyes which were made to looke upon these lucid bodies, should be still deluded, or can be, seeing their motion is rather the object of the eye, then their light, as is said? albeit motion be a common object, I see their motion, I see their lucid bodies, but their light I see not properly: their light is the cause or meanes by which, but not the *objectum quod*, or thing that I see.

4. We say that our high buildings would be hurled down if the earth did move: You answer, *That this motion is naturall, and therefore regular, and tending to conservation.* *Answ.* Earth-quakes are naturall motions, which neither are regular, nor tend to conservation: the motion of windes, haile, raine, thunder, &c. are naturall, and yet doe much hurt; therefore, the naturality of the earths motion cannot preserve our buildings from falling. But you say, *If a glasse of beere may stand firmly in a ship, moving swiftly, much lesse will the naturall and equall motion of the earth cause any danger in our buildings.* *Answ.* There is no proportion betweene a glasse of beer and a high building, nor is there between the motion of a ship and of the earth; for the ship moves upon the plaine superficies of the water, being carried by the winde or tide: the earth moves circularly and with an incredible celerity, as your side say. You should compare the earths motion, to the motion of a wheele or great globe, and

and then set your glasse of beer upon it whilst it is whirling about: but you need not feare the fall of your high buildings though the heaven whirle about, except you meane to build castles in the aire, or to raise your house as high as the tower of Babel; I thinke your buildings in the moone cannot stand upon such a whirling foundation.

5. I perceive by your Interjection *ba, ba, he*, that you are a merry gentleman, indeed you cannot answer for laughing; but, *Per risum multum, &c.* I doubt me you are troubled with a hypochondriacke melancholy, or with the spirit of blinde *Democritus*: take heed of *risus Sardonius*. But let us see what it is that tickles you. I had said, that though this circular motion of the earth were naturall to it, yet it was not naturall to townes and buildings, for these are artificiall: To this you answer not, but by your interjection of laughter, which is a very easie way to solve arguments, and so fooles will prove the best disputants. I hope you doe not thinke that townes and buildings are naturall bodies, or that the motion of the earth is naturall to them; and if you thinke that artificiall things are priviledged from falling, by the naturall motion of a naturall foundation, you speake against reason and experience; for a ship is not priviledged from sinking, because the foundation on which it is carried moves naturally; and high buildings must needs be weakned by motion, let it be never so equall and regular; hee that thinkes otherwise deserves to be laughed at. I have read of moving Islands, but without buildings, you were best goe build there.

6. I said, that the aire could never be quiet about us, but that there would be a continuall and forcible motion of it from East to West, if the earth did move with that celerity you speak of; to this you answer, *That the aire is carried along with the same motion of the earth*: But this will not help you, for the carrying of the aire about with the earth, cannot hinder the forcible motion of it, nor can we be so senselesse as not to feele it. Doth not the whirling about of a great wheele move the aire about it? and if you stood by, you should feele it. But you are very witty in your words following, *If the motion of the heaven* (say you) *which is a smooth body be able to carry with it a great part of the three elements, &c. much more may our earth which is a rugged body be able to turne the aire next to it.* You should rather say, If the earth which is but a small, dull, low, and heavy body, can carry the aire about with it, much more may
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the heavens doe this, which are vast, agil, active, and high bodies : for we finde that the superiour bodies are more apt to work upon, and to move the inferiour, then to be moved by the inferiour : as the inferiour parts of the little world of mans body are moved by the head, so it is in the great world. Againe, the heavens in respect of their agility, activity, subtilty, come neerer to the nature of spirits, then the earth, which is a dull, heavy, lumpish body, not apt to be moved, much lesse to move. Is it the earth that moves the aire, or the aire that moves the earth in earth-quakes ? Is it the earthy and heavy part of mans body that moves these aereall substances in the nerves, which we call animall spirits ? Or are not these rather the movers of our grosse bodies ? Your argument is just such another as this ; if the winde or aire be able to move about the weather-cocke, much more may the tower or steeple which is a rugged body move it : But that rugged bodies are more apt to move, or to be moved, then smooth bodies, I never heard before. I have observed that the smoother the bowle is, the swifter it runneth ; why did *David* choose five smooth stones to sling, if rugged ones were apter for motion ? When you would have your maid make you some mustard, give her a rugged dish, and a rugged bullet, and tell her that these are apter for motion ; she will presently entertain this new Philosophie with your interjection, *hahahe* : so when you say that a rugged body carrieth more aire with it then a smooth ; you meant perhaps the bodies of Satyrs, or of the wilde Irish in their rugges. But now distrusting your rugged conceit, you flie to the earths magneticall vertue, whereby it can make all things neer unto it, to observe the same revolution : this is a farre fetched shift, and a strange property of the *magnes* ; did you ever know a load-stone move any thing except iron or steele, or to move it selfe circularly, and to make all things neere to it, to observe the same revolution ; that these conceits are,

Non sani hominis, non sanus juret Orestes.

L. 1. sec. 1. c. 5

7. I said, That when the man or subject, the medium, and the object were all moved, the sight was hindered that the eye could not exactly judge of any thing. You answer, *That it's true where be severall motions, but when the subject, medium, and object, are all carried with the same equall motion, there is no impediment in the act of seeing.* But this is a meere shift of yours ; for though the motion be equall in all, yet the sight will be hindered. Sit downe in a turning chaire, or on a turning table, take a booke in your hand, and spectacles

cles on your nose, and let me turne you about, the motion shall be equall in all three, but I doubt me you will read ill-savouredly. your instance of reading in a ship is nothing ; for the ship moves sometimes so slowly that it is scarce discernable : but let a ship or coach move swiftly, and you shall not read distinctly. If a ship should move foure miles in a minute as you say the earth doth, you should scarce see the booke in which you read, much lesse the letters.

8. I said out of *Aristotle*, That one simple body had but one naturall motion, as the earth to descend, the aire to ascend, and therefore could not have a circular motion. You answer, *That these right motions belong onely to parts of the elements, and that too when they are out of their proper places*. Indeed you shew your selfe a weake Philosopher, for from whence have the parts of the earth their motion of descent, but from the whole ? Doe you not know that old and triviall maxime : *Propter quod unumquodque est tale, illud ipsum est magis tale* ? If your hand be heavy, much more heavy is your whole body ; if a part of the sea be salt, much more salt is the whole.

2. When you say that the elements have these motions, onely when they are out of their owne places ; if you meane of the act of ascending and descending, you say true ; but if you meane of the power or naturall possibility, you are deceived : for though they bee in their proper places, yet this naturall power of these motions is not taken from them.

3. When you say that a load-stone, in respect of its matter and condensity naturally tends downward ; you doe againe bewray your ignorance in Philosophy, for gravity is the cause of descent, not matter and condensity ; for the stars have matter and condensity, and yet they neither can, nor do descend.

4. When you say, that the load-stone which is a heavy body, and naturally tends downward, may naturally move upward, you shew your selfe more and more absurd ; for besides that it is repugnant to the Maxime above said, for a simple body to have two contrary motions, so it overturns the naturall properties of the elements : for if heavy bodies may naturally ascend, then light bodies may naturally descend ; and so we shall not know how one element differs essentially from another ; and consequently the descending of fire of old upon the sacrifices, and the ascending of *Elias* his body into heaven, were not miracles, but naturall motions.

5. That desire of union and coition which one load-stone hath with another, by which it breaks the laws of Nature, is but your conceit : if one load-stone draw another, or if it draw yron upward, that ascent is no naturall motion, but in

some sort is a violent attraction: therefore *Aristotle's* Maxime remains firme, that one simple body hath but one naturall motion, and consequently the earth doth not naturally move round.

9. We hold, that the gravity and magnitude of the Earth makes it unfit for so swift a motion. Your answer is, *That heaviness can only be applied to those bodies which are out of their proper places, or to such parts as are severed from the whole.* To this wee have partly answered already, that the essentiall properties of simple bodies are in the whole principally, and in the parts by reason of the whole. 2. It is false that heavy bodies are not heavy in their proper places; for they lose not their essentiall qualities by being in their places: Is a mill-stone lesse heavy when it is on or in the ground, then when it is raised from the ground? Put to your hand, and trie if you can with more ease wagge it upon the ground, then when it is raised some paces above it. 3. When you say, *That the globe of the Earth in its right place cannot truly be called heavy*: I say the contrary, that it can never be more truly called heavy, then when it is there; for if it were not heavy there, it would not be there: it is in its owne place because it is heavy, if it were possible to remove it from its place, it would never rest till it returned thither, because its heaviness would not suffer it to rest in any other place but in its owne, which is the lowest place fit for so heavy a body. 4. When you say, *That in it, and in the rest of the Planets there is an ineptitude to motion by reason of the matter, and condensity of their bodies*; you know not what you say: For if there be no naturall aptitude to motion in the Planets, and in the earth, that motion must be violent or preternaturall. Why is the motion of the fire downward, and of the earth upward, violent motions, but because these elements have no aptitude to such motions? 5. When you make the matter the cause of this ineptitude, you know not the grounds of naturall Philosophy; for it is the matter that gives the aptitude, as the forme gives the act. 6. You say, *That Nature may endow the earth with a motive faculty, proportionable to its greatnesse, as shee bestowes spirits upon other creatures (for instance, an Eagle and a Flie,) proportionable to their severall bodies.*

Sic parvis componere magna solebas: There is indeed so me proportion between an Eagle and a Flie; but between an Eagle, and the vast body of the earth, there is none at all: If you had compared the motion of the Eagle, to the motion of the great bird *Ruc*, you had spake within compasse: If one should

should say that a little wheele, and a great mill-stone may be moved according to the proportion of their bodies : so likewise may the hill *Aikos* or *Atlas* be turned about, he would be counted ridiculous: and yet there is a farre greater proportion between a mill-stone and those hills, then between an Eagle and the Earth. 7. *Though the magnitude of the earth make it incapable of so swift a motion, yet this doth not make the heaven much more incapable,* as you say : For it is the magnitude joyned with the heaviness of the earth, that makes it incapable of such a motion : but the heavens are not heavy, though great. A cloud which may be a mile or two about, hath a greater magnitude then a pebble small stone ; and yet you see with what facility the cloud is carried, whereas the stone is not moved, (though it were high in the air) but with the motion of descent. 8. As for the swiftnesse of the earth's course, which exceeds not (you say) *the celerity of clouds driven by a tempestuous winde ; of a cannon bullet which in a minute flies foure miles, &c.* These (I say) are the phantasies of a crazie braine in a dream : you are the onely darling and favourite of Nature, who both knowes the Earth's motion, and how much it can runne in a minute. It seemes this incredible swiftnesse of the earth hath made your head giddy, that you know not what you write : and how can it be otherwise ? for if you be carried 240. miles in an houre, and your pen whilst it is forming almost every letter foure miles in a minute, your braines flie as fast as the bullet out of the cannon : If this be true, I doe not think that either you know what you write, or where you are, nay you could not write at all ; nor were it possible for you to live, or for your lungs and heart to move, or draw breath.

Your subsequent discourse of the Earths magneticall property is grounded (as indeed all your Book) upon ridiculous suppositions ; and on such grounds do you raise the structure of your Babel or bables. 1. *You suppose that the lower parts of the Earth do not consist of such a soft fructifying soyl as in the surface, because there is no use for it.* But what if I should suppose the contrary, that it doth consist of a fructifying soyle, and that there be people there, aswell as in your Moone ? I doubt not but I could prove it with as good reasons as you do your world in the Moon. 2. *You suppose it consists of a hard rockie substance, because these lower parts are pressed close together by the weight of the heavy bodies above them.* What if I should suppose the contrary, that the softest ground is in the lowest parts, as being farthest from the Sun which hardneth the earth ; therefore they that dig deep in-

to the bowells of the earth, finde it still softer and softer the deeper they goe: And wee know that many fruits and heavy bodies are hard and stonie without, but soft within; the earth then is not like a cheefe that by pressing groweth hard. 3. *You suppose that this rockie substance is a load-stone.* But what if I should suppose it to be a diamond, which is more likely; both because it is the more precious stone, and Nature commonly layeth up the most precious things within her most inward parts; and because it is harder, for according to your doctrine, the pressing close of heavy bodies is the cause of hardnesse. 4. *It's probable (you say) that this rockie substance is a load-stone, because the earth and load-stone agree in so many properties.* What if I should say that they disagree in many more properties, and that therefore this cannot be the load-stone? But what an Argument is this? the earth and loadstone agree in many properties, therefore the lower part of the earth consists of load-stones: as if you would say, A man and an horse agree in many properties, therefore the lower part of a man consists, or is made up of a horse: or thus, The elementary and our culinary fire agree in many properties, therefore the inmost or lower part of the one consists of the other. 5. You say well that what hath all the properties of the load-stone, must needs be of that nature; but because you are not well read in the Master of syllogismes you inferre that the inward parts of the earth consist of a magneticall substance, which is the conclusion without an assumption, which should have been this: but the lower parts of the earth have all the properties of the load-stone, which wee deny. Now let us heare how you prove it; *The difference (you say) of declination and variation in the mariners needle cannot proceed from it selfe, being the same every where; nor from the heavens, for then the variation would not be still alike in the same place, but divers according to the severall parts of heaven, which at severall times happen to be over it; therefore it proceeds from the earth, which being endowd with magneticall affections, diversly disposeth the motions of the needle.* I answer, the Earth may have a disponent vertue to alter the needle, and yet not be a load-stone; so the heavens are the causes of generation, corruption, alterations, &c. in the world, and yet they are not capable of these qualities: the Moon causeth the sea to ebbe and flow, doth shee therefore partake of the like affections? or hath shee the properties of the sea? The load-stone disposeth the motions of the yron, will you therefore inferre that the load-stone hath the properties of yron? 2. If the variation, as you say,

of the needle be divers, according to the severall parts of heaven passing over it; it must follow, that the needle must vary every minute and scruple of an houre, even here where we live; seeing every scruple or minute divers parts of the heaven are still passing over it. 3. If the inclination or motion of the needle towards the North, is caused by the heaven, not by the earth; why should not the variation and declination of it be caused by the heaven likewise?

You are driven to hard shifts, when you are forced to flie to similitudes for want of proofs, to strengthen your weak and absurd assertions; for similitudes may illustrate, they cannot prove. 2. Because you cannot shew any similitude of the earth's motion with such things as you are acquainted, you are forced to borrow similitudes from those things with which you are not acquainted, rather then you will seeme to say nothing. You flie beyond the Moon, *Saturne* and *Jupiter* must serve you at a dead list, but I know not upon what acquaintance. This is your conceit: *A bullet, or any part of the earth, being severed from the whole, observes no lesse the same motions, then if they were united to the whole: whereas Jupiter, Saturne, &c. doe constantly and regularly move on in their courses, hanging in the etheriall aire.* But first tell us if *Jupiter* and the rest are separated from the whole; if they be not, what is it that moves them with contrarie motions? If they be not, then your simile hath never a foot. Againe, doth this follow: *Jupiter, Saturne, &c. have such and such motions; therefore bullets and parts of the earth being separated, observe the motion of the whole?* You had been better to have brought your simile from the sea, which is neerer to the earth in place and nature then the heavens are; thus: The sea ebbs and flowes, therefore parts of the earth being separated, may observe the motion of the whole. Doth not this hang well together like a rope of sand? If you had told us that parts of the sea being separated, observe the motion of the whole in ebbing and flowing; therefore parts of the earth separated, observe also the motion of the whole, you had said something; but you know the contrary of the Antecedent to be true; for you tell us that a bucket of sea water doth not ebbe and flow, though this motion be (as you said) naturall to the sea: But here you are deceived; for if this motion were a naturall property flowing from the essence of the sea, the whole sea, and every part of it should ebbe and flow; but it is not so, for the Adriatick sea hath this motion; the Tyrrhene, Baltick, and some other seas have it not; so some parts of the sea ebbe and

flow more and longer then others ; but essentiall properties are not capable of more and lesse; some thinke that this is no pure motion, but an alteration rather in the sea : but be it what it will be, it proceedeth not from the nature of the sea, but from externall causes; partly from the force and motion of the stars, chiefly of the moon; and partly from vapours and exhalations in the sea.

12. You say, *The whole earth may move round, though the severall parts thereof have no such revolution particular of their owne; for there be many things agreeing to the whole frame, which are not discernable in the divers parts of it, which you instance in the sea water, and in the bloud and humours of our body, which ascend in the body, but descend, being separated from it.* *Ans.* There is nothing proper and essentiall to the whole, but is also proper and essentiall to the parts separated or not separated; thus if circular motions were naturall to the whole earth as you say, the parts of it would retaine their nature still though separated : therefore every part of the earth descends, because the whole doth, but no part thereof moves circularly, because the whole doth not. As for the parts of the sea water in a bucket, there is not ebbing and flowing as in the whole; because that motion is not naturall to it, nor doth it proceed from the active forme, but from its passive, whereby it is apt to receive such a motion from externall agents : that motion which is essentiall and naturall to it, is not lost in the parts, being separated; for every bucket, yea, every drop of sea water descends, because that motion is naturall, therefore not separable. As for the bloud and humours in our body, which you say ascend naturally to the head, I say, they ascend not naturally, for naturally they descend, because heavy; but they are carried upward by the spirits in them, and drawne up by the attractive faculty, for each part drawes its aliment: now this bloud and humours being separated from the body, lose their heate and spirits, and so descend. Your instances then will not evert our maxime, to wit, that if the whole earth move circularly, the separated parts would retaine the same motion: but you say that this motion is not discernable in the parts; I grant it, neither is it discernable in the whole; and seeing it is neither discernable by the sense, nor demonstrable by reason, how come you to know it? if you can perceive in the swift violent course of a bullet, the magneticall revolution of the whole earth, you are more quick-sighted then *Lynx*.

You have certaine phrases like riddles, which stand in need of some

some *Oedipus* to explainethem. 1. You call the earth a great magnet; What's that? A great load-stone? If there be great store of iron in your moone world, this great magnet in time may draw down the moone upon us. 2. You say, *That parts of the earth may according to their matter be severed from the whole*: perhaps you meane they may be severed in respect of place, not of matter; for if they have not the same matter with the whole, they cannot be parts, nor can they be the subject of these common magneticall qualities you speak of. 3. You say, *That Jupiter and Saturn hang in the etheriall aire*: you love to confound what our wise fore-fathers have distinguished, because you have an etheriall earth in the moon, you would fain have an etheriall aire to: God hath separated the heaven or etheriall region from this aereall, so must we. I have read once of *aura atherea* in *Virgil*, but there the Poet divinely meanes our breath which wee have originally from heaven; I know no other etheriall aire but this. 4. You say, *That the flesh, bones, &c. tend downeward as being of a condensate matter*: but gravity is the proper cause of descent; and not density; for the fire and aire may be condensate, and yet tend upward. 5. You say, *That Saturne, Jupiter, and the Sunne, are magneticall bodies*: If you meane that these stars have the essentiall properties of the *magnes* to draw iron, then you wil make the earth and Planets to be of the same kind and species: if *Mahome's* iron chest were hanged between the sun and the earth, it's a question whether it should be drawne more forcibly upward or downeward. 6. You aske a reason, *Why the earth should not move about its center as the Planets doe*: I may rather aske you why it should, seeing it was made for rest, and they for motion; neither is there any thing wherein they agree, but that they are corporeall substances, in all things else they differ: why then should wee inferre the earths motion from their motion? 7. You that prove nothing, but boldly sayes any thing, as if men were bound to receive your dictates though never so unreasonable and ridiculous, as if they were oracles; you'l say tell us, *Of spots about the sun, thought to be clouds or evaporations from his body*: If your eagle eyes can see spots about the sun, then the heavens are not pure in your sight; but who hath spotted them which God hath made cleare and pure without spot or wrinkle? are not the spots in your glasse, or in your eye rather? I have heard of one who with his spectacles, reading in a booke, beat the booke three or foure times, thinking he had seen a flye on the paper, when it was a spot in his glasse. If you had read the absurd opinion of
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the *Manichees*, who held with as great confidence as you doe your conceits, That the sunne was a great ship sailing about the world : perhaps you would have told us, that these spots are great whales playing about the sides of the ship ; and we should as soone beleieve you in this as in the other : but now you cannot certainly tell us, *Whether these spots may not be clouds or evaporations from the body of the sunne.* But I would know what use is there for clouds there ; except it be to shadow now and then, and to refresh with raine your world in the moon : and if there be any such watry meteors about the sun, they must needs be extracted out of the sea, lakes , and rivers, that are in your upper world. And seeing these vapours cannot be condensate into clouds without cold , it confirms my opinion, that the sun is not hot formally ; and that the heaven was nick-named when it was called *æther*, *ab ardore* : but I much muse what these evaporations should be from the body of the sun ? What, doth the sun pant and sweat with his daily labour ? Evaporations are hot and moist exhalations, is there any moisture in the sunne ? Doe not these clouds and evaporations proceed rather from his horses nostrils ? But the prince of Poets tels us that they blow light out of their nostrils ;

Æn. II.

—— *Lucemque elatis naribus efflans.*

thus you afford us matter of sport.

But you goe on in your absurdities ; for having once plunged your selfe in this mire, the more you strive and struggle to get out, the faster you sticke, and the deeper you sinke in. You tell us, *That the moone is turned about by our earth* : why doe you not tell us also that the sunne is turned about by the moone, and the firmament by the sunne, and the *primum mobile* by the firmament , and the first mover by the *primum mobile* ? and so the world shall be turned topsie turvie. For is not any of these turnings as probable as the moon to be turned about by the earth ? perswade me this, and then you shall easily assure me that the cart drawes the horse, the crab courses the hare, and the ship turns about the wind ? You would make the common-wealth of heaven like many disordered common-wealths here on earth , where the inferiour and meaner sort of people will take upon them to rule and guide their superiors , Princes and Magistrates, and then all comes to confusion ; the horses run away with the coach and coach-man :

—— *Frustra retinacula tendens,
Fertur equis auriga, neque audit currus habenas.*

Is it not reasonable that the inferiour bodies should receive their motion from the superiour, as they have from them their beauty, perfection, and conservation?

But you give the moone many turners; *The earth by her magneticall motion; Jupiter (who turnes the foure lesser Planets) by his body; the Sun by his revolution.* So here be three severall wayes of turning; motion, body, and revolution: but is not revolution, motion? And when *Jupiter* turnes by his body, is there no revolution? Or when the *Sunne* turnes by his revolution, doth he not turne by his body? It seemes that he that turneth by his body, toucheth, and so *Jupiter* toucheth the lesser Planets. He touched indeed *Venus* in the Poet when he kissed her:

Oscula libavit nata: —————

But how he toucheth and turneth these Planets by his body, you doe not instruct us; but your drift in all this, is to shew that if the *Sunne* carry about his spots or clouds; the earth carry about the Moone, &c. much more may the earth carrie about an arrow or bullet: as if you would say, If the water carrie about the mill-wheele, and the wheele carrie about the mill-stones, much more may the mill carrie about the miller and his horse.

Concerning other mens observations of the flame of a candle carried equally in a ship; of an equall force, casting an heavy body but at an equall distance with & against the motion of the ship; of a heavy body in a ship falling down in a straight line; of a man leaping up in a ship, and abiding in the aire, one second scruple of an houre, and yet the ship not withdraw it selfe fifteene foot: Of these I will say but little, because I have already said something of them elsewhere; yet I must tell you, that though the smoake and flame of a candle within the ship are carried with the ship, it will not follow that the clouds which are without the earth are turned about by the earth. If you could thrust the clouds within the bowels of the earth, they should be carried about with the earth if it did move; but take the same candle of which you talke, and place it in a calme night on the top of the mast, when the ship is carried with the tyde, then you shall see that though the candle is carried along with the ship, yet the smoake being separated from the candle doth not follow the ship, but remains mounting upward in the aire. If the ship then carrie not along with it the smoake of the candle which is in it, how shall we thinke that the earth can carrie about the clouds which are so farre above it? Now to salve this, you tell us, *That the aire is as well limited in bounds, as that which*

CH. II.

De rebus m.
tu l. i. c. 3.
45, 5, & 6.

is included in a roome. But then I answer, that it is one thing to be included, and another thing to be limited; every thing that is included in a roome is limited, but not every thing limited is included; what is included must needs partake of the motion of that which includes it: the aire within the ship is moved by and with the ship, because it is included; but the aire without the ship though it be limited, yet moves not by or with the ship because it is not included.

You ask where the bounds of the air are terminated, and you answer your selfe by the spheare of vaporous aire; or which is all one, by the orbe of magneticall vigour; so you distinguish between the aire, and vaporous aire: but you tell us not how farre this spheare of vaporous aire, or this orbe of magneticall vigour reacheth; so that wee are not satisfied with your answer, except you meane that it reacheth to the moon; for you told us before that the moon is turned about by the earth, but then you contradict your selfe, for you say here, that these bounds are not terminated by the concavity of the moone's orbe; so where to finde you, and the bounds of your spheare of vaporous aire, I cannot tell; neither doe I understand how vaporous aire being a substance, can be all one with magneticall vigour which is an accident: and how this accident can have its orbe, this is a new piece of Philosophie which would be illustrated, and so doe the words following; *That all earthly bodies are contained within these limits, as things are in a close roome, and as parts in that whole to which they belong.*

Though a heavy by equall force be cast at an equall distance, whether it move with or against the motion of the ship, yet will it not follow that a bullet being shot towards East or West shall passe the same distance; for though you cast your bullet against the motion of the ship, it is not hindered nor furthered by its motion: so if the earth did move, that motion were no more to the bullets motion then if it stood still; but it is the motion of the aire that furthers or hinders the bullets motion, whether in the ship, or out of it. The earth then turning about the aire with great violence from East to West, must hinder the motion of the bullet or arrow flying to the East, and further that which cometh from the East; but it is not so in a ship, for the ship doth not carry the aire before it, but divides the aire whilst it moves, so that the aire gives place, as the water also doth to the ship, that there may not be penetration of dimensions. How then can the bullets motion be hindered or furthered:

thered by the motion of the ship, seeing the aire in which it moveth, is neither with it, nor against it? Of the winde here I doe not speake.

You grant that in a ship under saile, a stone being let fall from the mast will not descend to the same point, as if the ship stood still; but you say, the motion of a ship is accidentall, and it is otherwise in these motions that are supposed to be naturall. I have shewed against Lansbergius, that there is no naturall motion in the earth, but though there were, what's that to the furtherance or hinderance of the stones motion to the same point; suppose that not nature but an Angel turned about the earth, the motion notwithstanding is circular, be the mover what it will be, externall or internall, Nature or Angel: therefore, it is true still, that as the stone falling from the mast will not descend to the same point when the ship saileth, as if it stood still; so likewise a stone falling from an high tower, will not descend perpendicularly to the same point, the earth moving, as it would doe, if it stood still. Now, *how farre the ship will withdraw it selfe in its greatest swiftnesse, from him that leaps up and staves in the aire a second scruple of an houre:* and how far the earth in that space will goe from him in that certaine, neither is it materiall; it is sufficient that it will remove a certaine space, and that he shall not fall upon the same place from which he leaped up.

What you granted but now you recall, and tell us of Galileus, *That the stone would still descend unto the very same place, whether the ship moved or not.* So farre I yeeld, that if a heavy stone be let fall from a short mast whilest the ship moveth slowly, it is scarce discernable that the stone hath fallen or varied any thing from the perpendicular line: but if a small stone be let fall from a high mast whilest the ship moveth swiftly, then it is plaine to any man that hath sense, that the stone doth not fall upon the same point on which it would have fallen, if the ship had stood still. Now to say that the motion of the ship is impressed in the stone, is a toy; for how can one body presse a motion in the other whilest they are separated, as the stone and ship are before it fall? of magneticall bodies I speake not.

Being weary a ship-board you come on shore, and so having taken horse, you put spurs to his sides, and in your full carriere, you let a bullet drop out of your hand, which you say, *Hath a transverse motion, besides the motion of the descent.* But how should it have the transverse motion of the horse, seeing the hand doth but

unfold it selfe to let it fall ; the arme indeed is carried by the swiftnesse of the horse, and so is the bullet whilest it is in the hand, but being let fall, how can it have a transverse motion, seeing the hand did not expresse any such motion in it ? for to let fall is not to give a transverse motion : and though you would make it all one to cast a thing from us, and to let drop a thing when we are on horseback, yet the contrary of this is so cleare, that any man may see it without the help of spectacles. And sure if there were any transverse motion in the descent of the bullet, it is rather to be ascribed to the motion of the aire, then to the opening of the hand ; therefore this is but a crotchet, as likewise your conceit of a bullet shot out of a cannon set on end ; you spend your powder, and bullets, and paper too, to no purpose ; for you shall never perswade me (for all your two printed canons) that the bullet shot out and being in the aire can partake of the earths circular motion, till first you prove that the earth doth move, and then bring me better reasons then as yet you have done, for the circular motion of the bullet in the aire ; it is not the picture (which is the expression of your conceit and idea only) that can evince my understanding, when sense and reason are on my side ; for what may not men set forth in pictures ; Chinara's, Centaures, Gorgons, &c. and what not ? *Pictoribus atque Poetis*, — you know what followes.

Now you goe a birding ; for what is a gentleman but his pleasure ? and you discharge your peece with that dexterity that you hit the poore bird flying, as surely as if he were sitting upon a tree : and what followes upon this ? Namely, *That the motion of the peece as in aiming it is made to follow the bird in its flight, is communicated to the bullet in the aire.* But I see that though you have killed the bird ; yet you are no good birder ; for at the instant whilest the peece is discharged, it is held steadie, so there is no motion of the peece imparted to the bullet in the aire ; but though the peece did move, will it follow therefore that the earth turnes about bullets in the aire ? if your powder and shot be not better then your arguments, you'l never kill birds.

But what a monstrous absurdity doe you tell us, *That if a violent winde be able to drive ships, throw downe towers, turne up trees, much more may the diurnall motion of the aire (which doth so farre exceed in swiftnesse the most tempestuous winde) be able to carry with it the bodies of birds ?* If the diurnall motion of the aire exceed the windes in impetuositie, how comes it, that it doth not the same effects that
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the winde doth? why doe we not feele its force? surely if the aire did move with that violence from East to West, that a tempestuous winde doth, we should never have any ships come from the West Eastward; nor ships bound Westward should stay for a winde, seeing the motion of the aire at all times would carrie them with a witnesse. If we should have occasion to saile to New England, wee should be there quickly, but no hopes ever to returne thence; how should we be able to walke or sit on horsebacke, travelling against the motion of the aire, if it did move with that violence you speak of? much lesse could birds in their flight resist such a force; not the great bird Ruck (that I may fit you with a bird somewhat proportionable to your conceits) whose wings are twelve paces long, and snatches up elephants (as if they were but mice) in his talons a great way in the aire: sometimes you play the Painter, as in your circles and other figures; and sometimes the Poet, as here:

Admiranda canis, sed non credenda.——

As for your distinction of the motion of heavie and light bodies, to wit, *That they being considered according to the space wherein they move, their motions are not simple but mixed of a direct and circular; but according to the medium wherein they move, they have properly right motions.* This I say is such a riddle, that Oedipus could scarce have solved it; for why should not the motion be mixed as well in the medium as in the space? Is the aire or medium a hinderance to circular motions, so that these bodies can onely move there in a straight line? if so, you contradict your selfe, for you tell us still that bodies are moved round by the aire, and this by the earth. And how shall we understand that a stone falling downeward hath a mixed motion of a direct and circular according to the space wherein it moves, but a simple straight motion according to the aire wherein it moves? What mean you by this word (*space?*) you cannot meane the *ubs* of these bodies moving, for that is their rest in the place to which they move: *ultima perfectio corporis mobilis.* You doe not understand I thinke the intervall of the ancients which Aristotle hath refuted, as being neither a substance nor an accident; not a substance, because there would be penetration; not an accident, for so an accident should be better then the substance; for *Locus est prior & nobilior locato.* And if by space you understand the aire, then how will your distinction stand, the aire or medium, and the space being all one? the place it cannot signifie, for the stone descendeth not in its place, but to it; therefore what your space is,

and how distinguished from the medium, I thinke you doe not know. If wee should aske you with what motion Christs body ascended into heaven, you will answer that according to the space wherein it moved, it ascended by a mixed motion of a direct and circular, but according to the medium, it ascended by a simple straight motion; and so wee shall depart from you as wise as we came, like those that consulted with *Sibylla*; *Inconsulti abeunt*——

You say, *That Aristotle would not deny but that fire may ascend, and yet participate of a circular motion, so likewise must it be for the descent of any thing.* Aristotle is beholding to you, for if you will beleve him that heavie bodies must have a double motion, because he would not deny but that the fire may have a double motion; then if he would not deny but that the heavens may move round, and that the earth may stand still, you will beleve him; much more I hope you will credit him when by irrefragable reasons hee proves the motion of the one, and immobilitie of the other: but how ever, it is bad reasoning from the possibilitie of one thing to the necessity of another; great oddes between may be, and must be; between fire and earth; because *Cræsus* may be poore, must therefore *Irus* be rich? Because *Aristotle* saith the fire may descend, must the earth therefore ascend? there is no consequence *à posse ad esse*; much lesse *à posse ad necesse*.

I will suppose with you, *That whilst the ship is in her swiftest motion, a ball of wax being let fall into a vessell full of water, may be slow in sinking, and that the motion of the ship will not be discernable in it.* But that the wax should seem to the eye to descend in a straight line I will not suppose, because I have found it otherwise; the wax will seeme to have a transverse motion in the water though it descend in a straight line: so an oare seemes to be broken in the water, which element is not a true medium for the sight; now the reason why the motion of the ship in the way is not discernable, is because the great disproportion betweene the bignesse of the ship, and smallnesse of the wax: and because that motion is not the waxes owne, but the ships: these two reasons concurring, make this motion in the wax indiscernable; but suppose what you say were true in preternaturall motions, it will not therefore follow, that is also true in motions naturall.

If the aire did move round with the earth, it is most certaine that the comets would seem alwayes to stand still, being carried about by the revolution of this aire; but experience sheweth that they
rise

rise and set; to this you answer, *That most comets are above the sphere of the aire which is turned round with our earth.* *Ans.* You told us before that the earth turneth about the moone, therefore it must follow that the comets are above the moone, if they be above that aire which is turned about with our earth. 2. We have already shewed that the aire sometimes moveth the earth, but that the earth moveth the aire is false and preposterous. 3. You tell us, *That those comets which are within the orbe of our aire seeme to stand still, you instance that comet mentioned by Josephus, which hung over Jerusalem.* *Ans.* That was no ordinary comet or the worke of nature, but a miracle or worke of supernaturall power, as the rest of those prodigies which happened about the same time; to wit, the sudden light which appeared halfe an houre about the altar; the Cow that brought forth a Lambe in the Temple; the flying open of the brazen gate of its owne accord; the chariots and armed men that were seene in the aire, &c. Now when you say, *That this comet being within the orbe of our aire, seemed to stand still;* you are deceived, for it was Gods worke that it stood still over that place: and it did not seeme, but did truly stand still, by which it is plaine that the earth moveth not; for if it did move, then the comets which are neere to it would move swiftest; but the contrary of this is true, for the higher the comet is, the swifter it moveth, the lower, the slower; yea scarce at all; because it is the heaven that moveth the comets, and not the earth: so you falsifie *Seneca*, for *Natural.* he doth not say that these low comets seeme to move, but the clean *quest. l. 7. c. 6.* contrary, that they are altogether immovable, *undique immota.*

You say, *That you might justly passe over my nine arguments which I urged in one Chapter, against your opinion; but because I proceed (say you) with such scorn and triumph, you will examine my boastings.* You doe wisely, like the Romans, who that their Generals might not be puffed up with the glory of their triumphs, caused some to walke along by their chariots, using upbraiding words; the like doe you, calling my arguments cavills not worth the naming; yet you are pleased to name them, to shew doubtlesse their weaknesse, and your wit.

My first cavill (as you call it) is this; If the earth move, it will be hotter then the water, because motion is the cause of heat: but that the earth should be hotter then water, is repugnant to that principall in naturall Philosophie which affirms the earth to be colder; besides, the water would never freeze if it were moved as swiftly

swiftly as the earth. This argument because you cannot answer, you picke (as you thinke) a contradiction out of it, which is this; The earth by motion is hotter then the water, and yet the water moves along with it, which water is made warme also by motion, that it is not capable of congelation. *Ans.* Is this a contradiction thinke you: the earth is hotter then the water, and yet the water is hot too; the fire is hotter then the aire, and yet the aire is hot too? who ever heard that the degrees of comparison make a contradiction? I should not contradict my selfe, if I should say, *Keplar* was a cold disputant, but you are a colder. 2. Though I say that the water moveth along with the earth, yet the earth may be hotter then the water without any contradiction; for of two bodies moving together, one may be hotter then the other, especially, if they be of different natures; who knowes not that drie and solid bodies (such as the earth is) are more capable intensively of heate, then thin and moist bodies, such as the water is? 3. Though the earth, water, and aire next to it, be not severed one from another, yet they are made hot by such a violent motion: when you runne, your cloathes, skin, flesh, bloud, &c. are not severed one from the other, and yet your motion makes them all hot. 4. If motion in fluid bodies were the cause of coldnesse (as you say some do think) then it would follow, that the more you move, your bloud should be the colder. *Scaliger* shewes, that they who water their horses being hot, use to stirre the water violently, that it may be brought to a warme temper, that the horses may drinke without danger. 5. I deny that all running waters are the coldest, neither are they the colder because they run, but because they meet still with fresh aire: so shall you in a cold day (if you rise to walke) be colder for a while, then when you sit still; not because you walke (for that in time will warme you) but because you meet with fresh aire, vvhich you did not vvhilest you sate; neither is there yet so much heat in you as to abate the sense of the cold aire, till your motion have caused it. 6. I deny that the strongest windes are still the coldest, though they blow from the same coast at the same time of the year, for I have observed that in one *February*, a gentle easterly vvind hath brought snovv, and the next *February* a strong East vvinde hath brought raine. 7. If rest be the cause that in cold vvether vvater doth freeze, then all vvaters that rest vvould freeze, and no running vvaters vvould freeze; but this is false, for some vvaters resting doe not freeze, and sometimes running vvaters doe freeze, vvhen

the motion is not so strong as to stirre up the heat ; therefore , it remains that the heat caused by the motion , and not the motion it selfe , is the hinderance of the waters freezing. 8. If this motion were true that the earth runnes foure miles in a minute , the heat of the aire would be more then moderate ; even in winter you could not indure the heat of it ; we should need no fire to warme us ; wood would be cheap enough.

2. My second argument was this : If the earth did move the aire , then the aire which is next to the earth would be purer , as being more rarified ; but the contrary is true , for the higher the aire is , the purer it is. You answer never a word to this argument , which shewes you assent ; *Qui tacet consensire videtur.*

3. My third argument : If the earth did move the aire , it would cause a sound , but this is no more audible then the Pythagoricall harmony of heaven. You answer , *That there is no reason why this motion should cause a sound , more then the supposed motion of the heavens.* But I say , there is a great deale of reason , for if any solid body , be it never so small , though an arrow , bullet , or wand , moving the air , cause a sound ; will not the vast body of the earth turning the aire with that violence cause a hideous noise , which would make us all deafe ? now , there is no reason why the motion of the heavens should make any sound , for neither are they solid bodies themselves , nor doe they move or encounter any solid body , nor is there any aire in heaven ; which things are required to make a sound.

4. I argued , that nature had in vaine endowed the heavens with all conditions requisite for motion , if they were not to move ; for they have a round figure , they have neither gravity nor levity , they are incorruptible , and they have no contrary. This you say will prove the earth to move as well as the heavens ; *For that hath a round figure , it is not heavy in its proper place , and being considered as whole , the other two conditions you reject as being untrue , and not conducing to motion.* *Ans.* Though I should grant you that the

earth were round , yet it is not so exactly round and smooth as the heaven ; for it hath many mountaines and vallies , and some hills higher , some lower : is a globe or boule that hath knobs and dents in it so fit for motion as that which is smooth , and equally round ?

2. I have shewed already the folly of that conceit , which holdeth the whole earth not to be heavy in its own place , as if the elements must loose their essentiall properties being in their own places , whereas it is the place that preserveth the propertise and essenc of things.

Have the fire and aire lost their levity because they are in their own places? and is it not absurd to say (as I have already shewed) that there should be weight in a part of any thing, and not in the whole? as if a piece of an yron bullet were heavie, but not the whole bullet: you were as good say, that *totum non est majus sua parte*. 3. Whereas you say that the heavens are corruptible, you may say also that they are generable; and so being subject to generation and corruption, they are of the same nature with sublunary bodies, and must have the same matter; so that as there is a transmutation of the elements into each other, even so the heavens may be changed into the elements, and these into them: heaven may become earth, and earth heaven; this is your admirable learning which passeth all understanding. 4. Heaven (it seemes by you) hath a contrary, but you tell us not what that is; they are not contrary to one another, as fire and water; nor are they contrary to sublunary things, for they cherish and preserve them; neither have they the same common matter. 5. Any sensible man may easily conceive, that contrariety and corruption are hinderances to a perpetuall circular motion; and because (as is said) the heaven is not capable of them, but the earth is, it will follow that I argued upon good grounds, that the heavens only are endowed with all things requisit for motion, and not the earth: and therefore God will have nothing idle, as hee made nothing in vaine: hee hath made the heavens, and the three superiour elements to be exercised with motion, and the lowest element with generation and corruption; but it were strange if the earth should be subject to all three, and the heavens to none, but should stand still, and be perpetually idle; this is not futable to the wisdom of the Maker.

5. I reasoned that all similiary parts are of the same nature with the whole, but each part of the earth doth rest in its place, therefore doth the whole also. You say this Argument would prove, *That the sea doth not ebbe and flow, because every drop of water hath not this motion; or that the whole earth is not sphericall, because each part hath not the same forme.* *Answ.* I have shewed already that the eb-
bing and flowing of the sea are not essentiall to the sea, for in many places the sea doth not ebbe and flow; therefore it is no wonder, that parts of the sea, being severed from the whole, lose that motion, seeing many parts being joyned with the whole have it not. This motion then is caused by externall agents; but those qualities which are essentiall to the whole, are not lost in the parts: Every drop

drop of water is heavy, and moves downward, because the whole doth ; every drop of sea water is salt, because the whole is. 2. I have said already that the earth is not exactly sphearicall, and though it were, your conceit is nothing : for roundnesse belongs not to the earth, *quà talis*, as it is earth, *sed quà tota*, as it is whole. When a thing ceaseth to be whole, it loseth the figure of the whole, neither are external figures or outward qualities essentiall to things, but common accidents onely: Now, the qualitie of resting in the lowest place is essentiall to the whole earth, therefore to the parts also.

6. I said that the Sun in the world is as the heart in mans body, but the motion of the heart ceasing,, none of the members stirre ; so neither would there be motion in the world if the Sun stood still : *This (you say) is rather an illustration, then a proof.* I grant it ; for I used it as an illustration to discover with its light the weaknesse, and to dispell the darknesse of your opinion. And were it not an absurd thing to think that the arteries move, but the heart standeth still ? So no lesse absurd is it to say, that the Earth moveth, but the Sunne standeth still. 2. Illustrations oftentimes are forcible proofs, and used they are both by Divines and Philosophers.

7. I said that the Sun and heavens work upon these inferiour bodies by their light and motion. You say, *That the Sun and Planets working upon the earth by their owne reall, daily motion, is the thing in question, therefore must not be taken for a common ground.* *Answ.* If nothing shall be taken for a common ground which is or hath been in question, then there are no common grounds in Divinity and Philosophy ; for I know no fundamentall doctrine in the one, or principall in the other, which hath not been questioned by wanton and unsettled spirits. 2. I said that the heavens work by motion ; you inferre, as if I had said, of a reall daily motion : I spake neither of daily nor annuall motion ; if hee doth not work by his daily, doth hee work by his annuall revolution ? 3. Tell mee if you can, from whence proceed the many motions and mutations that are in sub-lunary things ? from themselves they cannot ; from a superior cause then they must, and what is that but the heavens ? and what other media or meanes are in heaven by which they work, but light and motion ? If you can tell us any other besides these, wee will be beholding to you.

8. I proved that the earth must be firme and stable, because it is the foundation of buildings. You say, *That it is firme from all jogging,*

ging, and uncertaine motions. *Ans.* This is a jogging conceit of yours, and an uncertain answer, as I have shewed already; for motion, as it is motion, is an enemy to buildings, be it never so uniforme; and a moving foundation can be no settled foundation: If a foundation be stable, how can it move? if it move, how can it be stable?

*Isa. 60. 20.
Rev. 10. 6.
Rom. 8.*

9. My ninth Argument was taken from the authority of Divines, grounded on Scripture; *Thy Sun shall no more goe downe, &c.* In the Revelations the Angel sweares *there shall be no more time*; therefore the heavens must rest, whose motion is the measurer of time; so *S. Paul* saith, *The creature is subject to vanity*; this is the vanity of motion, of which *Solomon* speaks: *The Sun riseth, and the Sun goeth downe, &c.* This (you say) is but a weak Argument; for it is granted that this opinion is a Paradoxe. *Ans.* As it deviates from the opinion of other men, it is a Paradoxe, but as it is repugnant to Scripture, it is a Cacodoxe. 2. When you say that *Isaiah* speaketh of that light which shall be in stead of the Sun and Moon, doe you answer any thing at all to his testimony? *Thy Sun shall no more goe downe, &c.* for hee distinguisheth between that light which God shall give to his Saints, and the light of the Sun which shall no more goe downe; so that hee doth not confound these two lights which are in God and in the Sun, as you would have it. A part of the Churches happinesse shall be, that shee shall both enjoy the light of the Sun without intermission, and also that new inaccessible light of divine vision. If then the Sun shall goe downe no more, it argues that the Sun useth to goe downe: Now, if you will have these words understood mystically, yet the thing to which they doe allude must be understood properly; to wit, the going down of the Sun. 3. You will have time to be measured by the motion of the earth, not of the heaven; and this you prove out of *Pererius*, who saith, That time depends upon the motion and succession of any duration: But *Pererius* explaines himselfe in another place: that that is only time properly and principally, which is measured by the motion of the *primum mobile*: because the motion of the heaven is the first, and the cause of all other motions; and because it is the least, as being the swiftest; and it is most certaine, and uniforme, universall, and known to all: so that if the earth did move (which as yet you have not proved) yet these conditions cannot agree with the earths motion: time which is measured by other motions, is not properly and formally, but materially and improperly

perly so called; ; so it is false that the earths motion is the cause of time, which *Pererius* never affirmed or dreamed of. 4. You will have the heavens subject to other vanities besides that of motion; as first unto many changes, witnesse the comets seen amongst them; and then to that generall corruption in the last day, when they shall passe away with a noise, &c. *Ans.* If changes be vanity, to how much vanity is your world in the Moon subject, which so often changeth? 2. Though the heavenly bodies were subject to other vanities, as you say, yet these will not exempt them from the vanity of motion. 3. How comets, which are Gods extraordinary workes, and denouncers of his judgements, are vanities, I understand not. 4. That the Apostle speaks of comets in that place, is your part to prove either by reason or authority. 5. That comets which are seen onely by us in the aire, are discerned by you amongst the heavenly bodies, is no wonder, seeing you can discern a world in the Moon. 6. *St. Ambrose* on that place sheweth, that the vanity to which the heaven is subject, is the continuall toile of their motion, and that it expects rest, that it may be delivered from servile work. 7. If the heavens be subject to the vanity of corruption, as you say, tell us whether you speak properly and philosophically, or metaphorically? If philosophically, you are absurd; for every fresh-man can tell you that heaven is not capable of generation and corruption; if metaphorically, you speak impertinently; for by the passing away of heaven, is meant onely the abolition of imperfect qualities, and a perfecting of it to a more glorious estate. 8. *The heavens* (you say) *are subject to that generall corruption in which all creatures shall be involved in the last day.* But you cannot tell us what that corruption shall be, and so you speak at randome: you doe not mean (I hope) that the heavens shall be involved in the same corruption with snakes, rats, toads, and other such kinde of creatures.

You say that there is not such invincible strength in my arguments, as might cause me triumph before hand. But I say there is so much vincible weaknesse in your answers, that makes me think that the refutation of them deserves neither triumph nor ovation; so that my strife with you is but

—*pugna nullos habitura triumphos* :

neither did I purpose to make you any reply, had not some friends solicited me to vindicate the truth and my owne credit, which

seemed to be somewhat eclipsed by the unwholsome fogs, and misty discourses of your Book.

I said that the heaven was called *Æthera*, *ab æt̃i ðeiv*, from its continuall motion; and the earth *Vesta*, *quod vi suâ stat*, from its immobility. You say they were so called because it was then the common opinion, that the heaven moved, and the earth stood. But now because you are of another opinion, it's fit that the names be changed aswell as the nature; let the heaven now be called *Vesta*, and the earth *Æthera*; or let heaven be called *Terra*, *quod perenni cursu omnia terat*, and the earth should be called *cælum*, *à cælando*; so let all things and arts be confounded: Grammar, aswell as your Logick, Philosophy, and Astronomy. 2. If heaven and earth have their Etymology from what they seeme to be, not from what they are; then the like may be said of other things. Fire is called *focus*, *à fovendo*, from cherishing; the sea is called *mare*, *quasi amarum*, because it is salt or bitter; not that these things are so, but because they seem to be so: the like may be said of other Etymologies. 3. For your conceit of the Hebrew word *Erets* from *Rys*, because it runs, is but a running motion of your head. The Hebrews who were better skilled in their owne language, then you are, derive *Erets* from רצת, because it continually desires to beare fruit, as *Munster* sheweth in *Genes.c. 1.*

You object to your selfe, *How are two distinct motions conceiveable in the earth at the same time?* and you answer your selfe, *that it is easily apprehended, considering how both these motions tend from West to East, as you instance in a bowle.* *Ans.* How the earth should have two distinct circular motions, is not conceiveable by us, nor demonstrable by you. Your similie of the bowle is a poor demonstration, and indeed, false; for it running on the superficies of the ground, hath not two circular motions, as you should have shewed, but onely one such motion or rowling; the other as it moves from your hand to the mark, is the motion of projection; or rather the bowles motion, is indeed but one, being a mixed or compounded motion; neither doth it move with two distinct circular motions in the same place at the same time, as you will have the earth to doe: but it runs from one place to another; neither is it naturall, but violent: and though it were true that the bowle had two distinct circular motions in the same place at the same time, yet it will not prove that the earth is either capable, or we conceiveable

veable of these two motions, considering the disproportion that is between the vast and heavy earth, and a small light bowle.

You conclude this Chapter, singing the triumph before the victory; for you say that we may gather some satisfaction out of it, but indeed we can gather none: neither are we a whit the wiser for it, but leave it with as great discontent, and as little satisfaction, as they did *Sibylla's* cave, who came to consult with her intricate Oracles;.

Inconsulti abeunt, sedemq; odere Sibyllæ.

CHAP. IX.

1. The earth cannot be the cause of its owne motion.
2. The vastnesse and thicknesse of the heayn no hinderance to its motion.
3. The matter of the heavens and their smoothnesse no hinderance to their motion.
4. Bignesse helps motion.
5. The heavens swiftnesse illustrated by other motions.
6. The earth neither the finall nor efficient cause of its motion, the heaven fitter for motion, because greater, and more constant; nature worketh not still the most compendious way, some idle similitudes refused.
7. Bodies having the same properties have not alwayes the same motion; motion belongs to the noblest creatures.
8. The smoothnesse, subtilty, and purity of bodies no hinderance to their motion; the aire moves the water, the circular motion of the fire naturall bow.
9. Of Intelligences how and why they move the heavens.
10. Magneticke vertue an idle conceit.

IN this Chapter, *ampullas loqueris & sesquipedalia verba*; you talk not like a man of this world, but like one who hath dwelt long in the Moone; or as if you were *Jupiters* secretary with *Minos*, and had the honour with *Æolus*, — *Epulis accumbere divum*. You dispute of the magnitudes and distances of the orbs, and of the swiftnesse of their motion with that exactnesse, as if you had measured them with a line: but I wonder how you could stand steady to take their measure, seeing the foundation on which you stand whirles you about foure miles every minute of an houre. I should thinke that your head was giddy when you wrote this, and that indeed you can no more dispute of these things, then a blinde man can doe of colours; neither can we give you any credit untill first you goe thither, and bring us a certificate signed with the hands of these Angels which turne about the orbs; otherwise you will but loose your labour: — *Nec quidquam tibi prodest*

Aereas tentasse domos, animoque rotundum,

Percurrisse polum —.

1. You will have us suppose that the earth is the cause of this motion; but this wee may not suppose, for if there be any motion in the earth, the earth is the subject of that motion, but not the cause;

for

Jovis arcanis Minos admixtus.

for nothing can move it selfe; *movens & mobile* are distinct things: but what if we should suppose what you desire, what will be gained thereby? to wit this, That the heavens shall be freed from their inconceivable swiftnesse: and is not this a goodly reason. We cannot conceive how the heavens move so swiftly as they say, *ergo*, we must suppose the earth to move? Shall we suppose the fire to be cold, because we cannot tell how the sunne is hot? If one cannot tell how the eye seeth, will you bid him suppose that the foot seeth? This is, *homines ex stultis insanos facere*: let the swiftnesse of heaven be never so great, we cannot suppose the earth to move. For that they may be swifter then our thoughts, is not impossible, if either we look on Gods power, or on the aptitude in these bodies for such a motion: *But you will not have us flye to Gods power what he can doe*: I pray you then whither shall we flie? *If we goe up into heaven he is there, if we goe downe to hell he is there also, &c. Whatsoever is done in heaven, and in the earth, &c. he doth it himselfe*, saith David. *Hee sustaineth all things by the word of his power; In him we live, move, and have our being*: therefore the Philosophers said well, that he was the first mover, and that the outmost heaven was the first moveable. *But if you will have us looke unto the usuall way of providence what is most likely to be done*, then we say that it is most likely, that the heavens move, and the earth stands still, as is already proved.

L. 2. sec. 1.]
C. 1.

2. *You say, the heavens being vast, materiall, condensate substances, are not capable of such a motion*: I heare words but to no purpose, for you should tell us, whether the matter of heaven, and the condensation thereof be like this of the earth; and whether the mover be so weake as that he cannot turne about that vast body. I had told you heretofore that bodies move swifter or slower, not because they are greater or lesser, but because they are heavier or lighter Motion which you call a Geometricall thing (but you are in this decived) depends not from quantitie, lesser bodies move oftentimes slower then the greater; a snail then an elephant, a pebble stone then a great cloud: it is not then beyond the phantasie of a Poet, or madman, (as you madly speake) for the heaven to move very swiftly; but if any man will take upon him to tell exactly how swiftly the heaven moveth, or that the earth moveth at all; I must needs tell him that he needs hellebor.

3. When we say that the heavens are bodies without gravitie, you answer us with your recocted coleworts, or idle evasion of yours so often repeated, *That the whole earth in its owne place is not heavy*:
which

which shift we have divers times already refuted: but when you say, *That the heavens being of a materiall substance, it's impossible but that there should be in them some ineptitude to motion*: you speake like one who is a stranger to Philosophie, for if it were not for the matter, there would be no motion in the world. As the forme moveth, so it is by reason of the matter that all things are moved, so that where there is matter, there can be no ineptitude to motion in respect of the matter. But it is a rugged conceit in you when you say, *That it's not conceivable how the upper spheare should move the lower, unlesse their superficies were full of rugged parts, or else they must leane one upon the other.* *Answ.* What rugged parts are there in the superficies of winds and clouds, when the windes move the clouds? or what ruggednesse is there in smooth waters, when in rivers the formost waters are moved forward by the hindermost? Or in the smoake when it carrieth upward a piece of paper? But when you say, *That the farther any spheare is distant from the primum mobile, the lesse it is hindered by it, in its proper course*: It is true, and yet not repugnant to *Ptolomies* opinion, who saith, That in heaven there is no reluctancie; for his meaning is, that there is no inferiour spheare that hindereth the swiftnesse of the *primum mobile*, and that is the reason why it is so swift, because it hath no resistance either from the forme, or from the matter, or thicknesse of the medium.

Novv, *In nova fert animus*,—— you would faine play the Poet, and build castles in the aire, but indeed you have already played the Poet too much; for your vvhole booke is nothing else but a heap of fictions; your vvhorld in the Moone, your moving earth, your standing heavens, your figures and characters, what are they else but pleasant dreames, and idle phancies, fit enough to be inserted into *Ovids Metamorphosis*, if you could digest them into good verses? And you doe not onely play the Poet, but the Painter also in your figures, for a fictitious Picture is a visible Poem, and a Poem is an audible Picture; Painters and Poets have authority you know. But you wonder much why Poets have not feigned a castle to be made of the same materials with the solid orbes. *Answ.* I thinke the reason is, because they did not know that there were people in the Moone; if they had known this, doubtlesse they would have fitted them with enchanted castles, and other buildings; novv vvhath they have omitted, doe you, that posterity vvhhen you are dead may say;

— Nunc non cinis ille Poeta

P

Felix?

Felix? non levior cippus nunc imprimit ossa?

But I vvill not novv spend time in vievving the parts and materials of your Poeticall castle, till you have brought it to perfection; and then I vvill take a survey of every particular.

4. I had said that a bigger body, as a mill-stone, vvill naturally descend svvifter then a lesse, as a pebble stone; the cause of this, *You vvill not have to be ascribed to the bodies bignesse, but to the strength of naturall desire which that big body hath to such a motion.* *Ans.* You make a shevv as if you did ansver our argument, but in effect you ansver nothing: for if I should aske you vvhy a mill-stone falls faster then a pebble, you vvill ansver, because it hath a stronger desire to fall; but if I aske againe why it hath a stronger desire, you ansver, because the bigger a thing is, the stronger is its desire, &c. and is not your opinion now all one vvith mine in effect? that it is the bignesse that is the cause of this swiftnesse? now the same reason is applicable to bodies moving circularly: for though they were in their proper scituations, yet there is in them as great a desire to move about the center, as there is in elementary bodies to move to and from the center; therefore, the greater the body is, the greater desire it hath to move according to your opinion. Again, I said that the vvinde vvill sooner move a great ship then a little stone, you ansver, *This is not because a ship is more easily moveable then a little stone, but because a little stone is not so liable to the violence from whence its motion proceeds.* This ansver is as vvise as the former, for vvhy is not the stone as liable to the vviolet cause of its motion as the ship, but because it is not so big, therefore the ship is more easily moveable then the stone; because by reason of its bignesse it's more liable to the vviolet cause of its motion. And vvhen you say, *That I cannot throw a ship as farre as a stone;* I grant it; but this vvill onely argue vvant of strength in me, but not vvant of aptitude for a swifter motion in the ship then in the stone, if I had strength to sling the one as vvell as the other. A bigger bullet out of the same peece vvill flie farther and swifter then a lesser.

5. I brought some instances to illustrate the possibility of the heavens swiftnesse, as the sound of a cannon twenty miles off; of the sight of a starre in a moment, of the light passing suddenly from East to West; of the swiftnesse of a bullet carried by the powder; to these you ansver, *That the passage of a sound is but slow, compared to the heaვენ motion; that the species of sound or sight are accidents, and so is the light; that the disproportion is great betvvixt the heavens motion and*

and the swiftnesse of a bullet. *Ans.* Let the sound, and light, and species be what they will be, they are moved; and if they be accidents they cannot be moved alone, but with the subject in which they are inherent: therefore, if there be such swiftnesse in the motion of these, what need we doubt of the swiftnesse of the heavens? and if accidents can be so swiftly moved with and in their subjects, much swifter must be these heavenly substances having no resistance, whose matter is so pure, that it is a great furtherance to their motion: and though there be great disproportion betwixt the bullets motion and the heavens swiftnesse, yet the motion of the one serves to illustrate the swiftnesse of the other. And yet I take not upon me as you do, peremptorily to tell how swift the heavens are; and though I said that the light was an accident, yet I said also that it was *corpori simillimum*, that it comes very neere to the nature of a body: neither did *Aristotle* prove the light to be no body, because of its swiftnesse, as if no body were capable of that swiftnesse, for then he should contradict himselfe as you use to doe; but he meanes that no sublunarie body had so swift a motion. It had been folly to illustrate the swiftnesse of the bullets motion by the motion of the hand in the watch; for there be many other motions far swifter then this to expresse the bullets motion: but of sublunary motions there be none swifter then those I alledged to illustrate the motion of heaven.

6. *You would have the earth to be both the efficient and finall cause of its motion:* But indeed it is neither the one nor the other, for if it move at all, it must be moved by another mover then it selfe: and God made the heavens not for the earth, but for man; so the diurnall and annuall motions have man for their finall cause, and heavenly movers for their efficient. 2. *You say, That nature is never tedious in that which may be done an easier way:* This I will not grant you, for nature doth not still worke the easiest, but the most convenient way; but I deny that the earths motion is either more easie or more convenient then that of heaven; for a light body, such as heaven is, is more easily moved then a heavy; and it is more convenient that the foundation of our houses should remain firme and stable, then moveable, as I said. I could tell you how laborious and tedious nature is in the perfecting of mans body, and of many other things, therefore she doth not take still the most com-

pendious way. 3. You say, *It is not l.k:ly that the heaven should under-
goe so great and constant a worke, which might be saved by the circumvo-
lution of the earths body.* How tender hearted are you? are you afraid
that the heavens will grow wearie? and I pray you, is not heaven
fitter to undergoe a great and constant worke then the earth, so
small, so dull, so heavy, so subject to change? a great worke is fit
for a great body, and a constant work fit for that body that know-
eth no unconstancy. 4. You are deceived when you say, *That the
heaven receiveth no perfection by its motion, but is made serviceable to this
little ball of earth.* The perfection of heaven consisteth in its motion,
as the earths perfection in its rest; neither was heaven made to
serve this ball, but to serve him who was made Lord of this ball.
5. Your *Similies of a mother warming her childe, of a Cooke roasting his
meat, of a man on a tower, of a Watch-maker,* are all frivolous. For a
mother turneth her childe, and a Cook his meat to the fire, because
the fire cannot turne it selfe to them; the motion is in them, not in
the fire: so he that is on a tower, turnes himselfe round to see the
countrey, because the countrey cannot turne it selfe about him. If
you had proved to us that the heaven cannot move, but that it is
the earth that moveth, then we should yeeld that the earth did foo-
lishly to expect the celestiaall fire to turne about her; but this you
have not as yet proved, neither will you be ever able to prove. The
earth indeed is a mother, but as senselesse and stupid as *Niebo*, who
would suffer her children to starve with cold, if that heavenly fire
did not move about her. As for your instance of a Watch-maker, I
will use it in your owne words, but to our purpose: *If a wise
Watch-maker will not put any superfluous motion in his instrument, shall
we not thinke that nature is as provident as any ordinary mechanicke?*
Therefore doubtlesse it had been superfluous for the earth to move.
And whereas you say, *That the motion of the starres is full of confusion
and uncertainties:* That is true in respect of your ignorance; there is
an heavenly order, and harmony amongst them, the confusion is
in your head, and the uncertainty in your knowledge.

7. You say, *That motion is most agreeable to that which in kinde and
properties is neereſt to the bodies that are moved.* But this I say is false,
for an immoveable body is not made capable of motion, because it
is neere in some properties to the body that is moved. A rocke and
a mill-stone which perhaps was taken out of the same rocke, agree
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in kinde and properties, will it therefore follow, that because the mill-stone moves round, the rocke also moves round? The sea-water and well-water agree in kinde and properties, doth the well-water therefore ebbe and flow? But your drift is to shew, *That the earth moveth with the six Planets, because both Earth and Planets have a borrowed light, whereas the Sunne and fixed Stars have it of their own.*

Ans. A goodly reason, the earth must move as well as the fixe Planets, because it hath a borrowed light as well as they; as if you would say, *Saturne* and the Moone have a borrowed light, therefore they have the same motion and bignesse: or thus, the Planets have a borrowed light as well as the earth, therefore, they rest, or be as heaوية as the earth; but what if I should say, the Planets have some light of their owne, as may be seen by the Moone, which the earth hath not; and therefore they agree not in this property of light, and consequently the earth moveth not as they doe. But when you say the fixed stars have light of their owne, you speake at randome, for you can shew no reason of this conceit, why the fixed starres should have light of their owne, and not the Planets; or why the Planets borrow light, and not the fixed stars. Again, you thinke, *That the Sunne and Stars should rest, because they are of a more excellent nature:* As if motion did belong to the ignoblest creatures; we know the contrary, Man is a more noble creature then a rocke, yet man moveth, and the rocke is immoveable. The heart in our bodies is more noble then the guts, yet that moveth, they move not. Is the body of man lesse excellent when it is moved by the soule, then when it is at rest putrifying in the grave. When water rests from its motion it loseth its excellencie, and stinketh, therefore, motion in many things is more noble then rest: as for the rest which you say is ascribed to God, that is not to our purpose, for it is transcendent and hyperphysicall; and as God is said to rest, so he is said to move; therefore called *Θεός*. But why you should thinke the fixed Starres of a more excellent nature then the Planets, I know not, neither can you give any reason for it.

8. *Aristotle* you say tels us, that the time of the revolution of each orbe should be proportionable to its bignesse, which can only be you thinke, *By making the earth a Planet.* I answer, that of two evils the lesse is to be chosen, and better it is that there should be

*De Caelo.
l. 2. c. 10.*

some disproportion between the bignesse of the orbes, and the time of their motion, then that the earth should move. 2. You cannot exactly tell what disproportion there is in their motions, till first you finde out the true knowledge of their magnitudes.

That the Comets which move in the aire are not moved by the heavens, but by the earth, you prove; *Because the conserve superficies of the Moone is thought to be smooth, so that the meere touch of it cannot turne about the fire with a motion not naturall to it; nor can the subtile fire move the thicker aire, nor this the waters.* Answ. How the upper spheares move the lower, is neither knowne to you nor me but by conjectures. 2. I have already shewed that one smooth body by its touch may move another, as the winde moves the clouds; so in the Northerne seas, one mountaine of ice which is smooth, moves the other forward. 3. The subtiltie and puritie of the fire is no hinderance to its moving of the thicker aire, for doe not our animall spirits which are pure and subtile, and yet materiall, move our grosse bodies? Doth not the winde move grosse substances? 4. That the aire doth not move the water, is repugnant to experience, for within the Tropickes, the sea is continually moved from East to West by the aire; and this by the heaven as I have shewed elsewhere. 5. That the circular motion of the fire is not naturall, is false; for though this motion proceed not from an inward principle, as the straight motion doth, yet it is naturall, because the nature of the fire is preserved by it; for the fire never gives off moving upward, till it begin to move circularly, and then is it in its chiefe perfection when it hath attained this motion.

Lansbergius you say concludes that the earth is easily moveable, from the words of *Archimedes*, who said, that he could move the earth, if he knew where to stand and fasten his instrument; it is a foolish conclusion, for so he might as well conclude, that armed men may arise out of the ground, because *Pompey* said, that if he did but stampe with his foot, the ground would yeeld him armed men. So because *Medea* said:

Ego inter auras aliti curru vehar;

That shee would flie in the aire in a chariot drawne by dragons, that therefore shee could doe as shee said; this is to play the Poet.

9. *The opinion of Intelligences, by which the heavens are moved* (you say) *hath its originall from Aristotle's mistake, who held the heavens to*

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be eternall. I answer, that *Aristotle* was mistaken in holding the heavens to be eternall *à priori*; but I deny that there is any error in holding them to be eternall *à posteriori* in respect of their substance.

2. *Aristotle* might have held the opinion of Intelligences, without holding the heavens to be eternall; for the eternity of the mover doth not necessarily inferre the eternity of the thing moved: God is eternall, so is not the world, our soules are eternall, so are not our bodies.

3. You prove, *That Intelligences are superfluous, because a naturall power intrinsecall to these bodies will serve the turne as well*: So you might inferre that our soules are superfluous, because a naturall power resulting from the matter of our bodies, and intrinsecall to them will serve the turne as well. But indeed such excellent bodies as the heavens did require a more excellent forme then sub-lunary bodies doe; for these are content with an informing forme; but the heavens stood in need of an assisting forme: and how can we conceive that out of such pure and simple materials as the heavens are, there should result a naturall power to move them circularly, orderly, constantly, perpetually? If our grosse and decaying bodies are moved with reasonable soules, which though they be internall formes, result not from the power of the matter; much more should the heavens be regulated by Intelligent spirits, and not by any naturall power.

4. This naturall power of moving must be either the forme brought out of the matter, which is done by generation, but in heaven there is no generation, because there is no privation of an other forme, or any appetite in the matter to it; or else this power must be a forme brought into the matter: but no forme is introduced into the matter, except the reasonable soule; therefore, there is no informing forme in heaven, and consequently there can be no other movers but Angels. This Argument I urged against *Carpenter*, but you winked at it and said nothing.

5. You say, *That Intelligences being immaterials cannot immediately worke upon a body*. What is this to the purpose? If they work upon bodies, it's no matter how they worke; wee know that our soules worke upon our grosse bodies, and so doe the Intelligences upon the heavens: we know that spirits work upon materiall substances immediately, or else there would be no working at all; and it is ridiculous in you to disable the Angels from working or moving, because they have no instruments or hands to take hold of the heavens.

vens. What hands hath your soule when it works on your body? What hands hath the winde when it moves the clouds? 6. You have no reason to insult so over the Schoole-men, who affirme, that the faculty whereby the Angels move their orbes, is their will; for what faculty else can you imagine in them? Doth not your soule worke upon your body by the will? so, that albeit there be many instruments by which the soule moveth the body, yet the prime faculty by which it moveth is the will: so that if you suspend your act of willing a motion, you must needs stand still; and on the contrary, your onely willing to move the hand or foot is sufficient as the chiefe medium or faculty to move them. And so it is with the heavens, saving onely that there are no subordinate organs by which the Angelicall will doth move the heavens: but when you say that there was no need of Angels, *since this might be as well done by the will of God*: You speake idly, for so you may say that there is no need of our soules to move our bodies, since this might be as well done by the will of God: Angelicall and humane wills are subordinate and serviceable to the will of God, but not excluded by it; *For in him we live and move*, and yet we live and move by our soules too. And as impertinent is your other question, *How the orbes are capable of perceiving this will in the Intelligences, or what motive faculty have they of themselves to inable them to obey*? *Answ.* The orbes are as capable to perceive the will of the Angels, as your body is to perceive your will, or as those bodies were which the Angels of old assumed, and by them conversed with the Patriarchs: and as those bodies had a motive faculty to obey the Angels will, so have the heavens much more.

Keplar's opinion that the Planets are moved round by the Sunne, and that this is done by sending forth a magneticke vertue, and that the Sun-beames are like the teeth of a wheele, taking hold of the Planets, are senselesse crotchets, fitter for a wheeler or miller, then a Philosopher: This magneticke vertue is a salve for all sores, a pin to stop every hole, for still when you are reduced to a non-plus, magneticke vertue is your onely subterfuge, like *Aneas* his target, *Unum omnia contra tela Latinorum*: If you had told us that the North starre had a magneticke vertue, because the needle touched with the *magnes* looketh towards it, some silly people perhaps would have beleev'd you, and yet the magneticke vertue is in the needle, not in the star; But

but that in the Sunne there should be a magneticke vertue, it hath no shew of probability. *This vertue* (you say) *may hold out to as great a distance as light or heat*: But if this comparison hold, it will follow, that there is no such vertue in the Sunne, for that light which is in the aire is not in the Sunne, neither is that heat which wee feele caused by the Sunne, in the Sunne: but your following words are admirable; *That if the Moone may move the sea, why may not the Sunne move the earth*? As if you would say, If the North-winde shake the woods, why may not the South-winde shake the mountains? Or (according to your doctrine) if the earth can move the Moone, why may not *Venus* or *Mercury* move the Sunne? or why may not the Sunne move the Firmament?

You conclude well, *That your Quere's are but conjectures, and that no man can finde out the workes of God from the beginning to the end*: and yet you have found out that which God never made, to wit, a rolling Earth, a standing Heaven, a world in the Moone; which indeed are not the workes of God, but of your owne head: for his workes are incomprehensible, his wayes past finding out. Trouble not then you selfe too much in these things, which in this life you cannot understand; learne to know your selfe that wee may know you too, and by the knowledge of your selfe, strive to know God, the knowledge of whom is life eternall. I will give you good counsell in the words of *Hago*: *Nosce teipsum; melior es si te ipsum cognoscas, quam si te neglecto cursus siderum, vires herbarum, &c. Cælestium omnium & terrestrium scientiam haberes; multi multa sciunt, se ipsos nesciunt, quum summa Philosophia sit cognitio sui.*

Lib. 1. de
Anima.

CHAP. X.

1. The idle and uncertaine conceits of Astronomers concerning the celestiaall bodies.
2. The appearances of the Sunne, and other Planets cannot be so well discerned by the earth if it did move.
3. The excellency of Divinity above Astronomy, and an exhortation to the study of it.

THIS proposition is full of suppositions, fraughted with figures and characters, which more affect the eye then satisfie the minde; neither doe they demonstrate the motions of the earth, but the motions of your head. The pictures in *Ovids Metamorphosis* adde not the more credit to his fictions, neither

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doe these figures to your phancies : wee will beleeve no more then you can demonstrate by sense or reason ; demonstrations are of things true and reall, not of dreames and imaginations : therefore, neither your pictures, nor bare words, shall perswade us, that dayes, moneths, yeares, houres, weekes, &c. are or can be caused by the earths motion, till first you have proved that the earth moveth ; you that cannot abide Eccentrickes and Epicycles in the heavens, are forced now to make use of them, both for the motion of the Moone, and of the earth too ; so that you have not mended but marred the matter, rejecting *Ptolomy* because of Eccentrickes and Epicycles, and yet you admit *Copernicus* with his new devised Moone Eccentricks, and Earth Eccentrickes, so that you thinke by these fictions to solve the divers illuminations, bignesse, eclipses, &c. of the Moone. A phantasticall Astronomer might devise other wayes besides these of *Ptolomy* and *Copernicus*, to shew the different appearances of the Planets ; for of things that are uncertaine and beyond our reach, divers men will have divers conceits and conjectures : many have held, and doe at this day yet maintaine, that the star have soules and are living creatures, and why may not this be as true as your opinion, that there is a world of living creatures in the Moone ? What if I should hold that the eight spheare is a solid substance, therefore called *firmamentum*, full of holes, some great and some small ; so that these lights which wee call starres are but beames of that bright and cleare heaven above, called *Empyreum*, shining through these holes ? Or if I should say, that every starre had its Angel moving it about the earth, as wee use in darke nights to carry lanternes : divers Nations of *Asia*, *Africke*, and *America*, have divers opinions of the starres, and few or none true, all which do argue our ignorance and foolishnesse ; we are but

Curva in terris anima, & cœlestium inanes.

But any of these conjectures mentioned, is as probable as yours of the earths motion ; therefore, I was not without sense and reason when I concluded my Booke with this Argument, That if the Sunne stood still, there could be no variation of the shadow in the Sunne Diall : you will say that may be altered by the earths motion, but I say to you as I said to Mr. *Carpenter*, prove that, and what I profered to him, I also profer to you :

Phœlida solus habeto.

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You will say this may be easily proved, if I will admit the earth to move: but so you may say, that you will easily prove an Ass to flye, if I should admit that hee hath wings; but I will not admit that upon a false maxime of your deviling, you shall inferre what you please. What if I should admit an absurd conceit of yours, that the Earth draweth the Moone about? can you prove mee, that when the Moone shineth there is any variation of shadows, when both the luminous and opake body are moved with the same motion?

2. *The difference (you say) betweene Summer and Winter, between the number and length of dayes, and of the Sunnes motion from Signe to Signe, and all other appearances of the Sunne concerning the annuall motion, may be seene by your Figures; and easily solved by supposing the earth to move in an Eccentricall orbe about the Sunne.*

Ans. Not the Sunnes appearances but your phantasies are to be seene by your figures; the earth doth not move because your figure represents it: it is also an easie matter to suppose things that never were, nor can be; you suppose the earth to move about the Sunne, and not the Sunne about the earth: you may as well suppose the house to be carried about the candle, and not the candle about the house, and so all appearances may be solved as well this way as the other; for if the house did move about the candle, the house shall be seene as well as if the candle did move about the house: and why may we not suppose the house to move sometimes neerer to, and sometimes farther from the candle, the neerer it moveth, the more it is illuminate, &c. But what *Cato* is so grave as to refraine from laughter at such absurd and foolish suppositions?

You spend much paper to shew how the Planets will appeare direct, Stationary, retrograde, and yet still move regularly about their owne centers. This is, *Magno conatu magnas nugas dicere*; and who but *Jadeus apella* will beleieve, that one motion of the earth should cause so many different appearances in the severall Planets? howsoever you talke of *Ptolomie's* Wheele-worke, I preferre his Wheele to your Whirlegig. It is more easie for many Planets to wheele about, then for one rocke or piece of earth to whirle about: but you are as exact in placing the Planets, as if you had been upon the top of *Jacobs* ladder. *You place Mercury next to*

the Sunne, hiding himselfe under his rayes; you say well, for theeves doe use to hide themselves; but for one to hide himselfe in the open light is not usuall: darknesse (one would thinke) were more proper then that; But how Mercury hath a more lively vigorous light then any of the other, I understand not: I should rather thinke that there were a more lively vigorous light in the Sun, Moone, and Venus. And whereas you say that Venus in her conjunction with the Sunne doth not appeare horned; is true; but if her husband Vulcan had beene as neere the Sunne, his hornes doubtlesse had beene seene; doe not you know how much ashamed Venus was, when the Sunne looked upon her, being in bed with Mars? Now, that the orbe of Mars containeth our earth within it, I will not deny; but I am sure our earth containeth Mars within it, who is oftentimes too exorbitant: — *Toto scivit Mars impius orbe.*

And that the orbe of the Moone comprehends the earth in it, because shee is some times in opposition to the Sunne, is a feeble reason; as, though the opposition of two round bodies should be the cause why that which is in the midst betwixt them, should be within the circumference of either of their circles or orbes. Other Planets have their oppositions, is therefore the earth within the orbe of either of them? Or why is the earth more within the orb of the Moone then of the Sun, seeing the Moone is no more in opposition to the Sun, then the Sun is to the Moone?

3. You conclude your Booke with a large digression upon the commendations of Astronomy, which hath for its object the whole world you say, *And therefore farre exceeds the barren speculation of universale, and materia prima.* *Answ.* It seemes you have left nothing for the objects of other sciences, if Astronomy must ingrosse the whole world for its object. 2. *Univerſum*, belike, exceeds *Universale* with you, and the extent of the one is not so large, nor the speculation so fruitfull, as of the other; but surely your *Univerſum* or world in the Moone is as barren a motion, as that of *Universale*. 3. *The knowledge of Philosophy and Logicke, is but cobweb learning in your conceit;* but we thinke that these cobwebs are strong enough to catch such flies as you; and indeed there is more substance in these cobwebs then in your Astronomicall dreames and phanſies. 4. What you say of other knowledge,

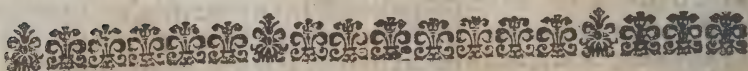
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That it depends upon conjectures and uncertainty; is most true of your Astronomicall Booke, wherein I have found nothing but suppositions, may-be's, conjectures, and uncertainties. 5. Whereas you say, *That man had os sublime, a face to looke upward, that he might be an Astronomer*: You are deceived, it was that hee might be a Divine; for the starres were made, not that he should doate upon them in idle speculations and niceties full of uncertainty, but that by their light and motion he might be brought to the knowledge of Divinity, which your self in your subsequent discourse is forced to acknowledge. But take heed you play not the Anatomist upon these celestiall bodies, (whose inward parts are hid from you) in the curious and needlesse search of them; you may well lose your selfe, but this way you shall never finde God.

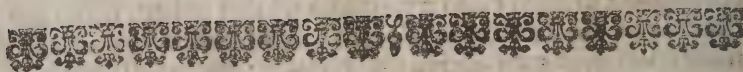
6. Whereas you say, *That Astronomy serves to confirme the truth of the holy Scripture*: you are very preposterous, for you will have the truth of Scripture confirmed by Astronomie, but you will not have the truth of Astronomie confirmed by Scripture: sure one would thinke that Astronomicall truths had more need of the Scripture confirmation, then the Scripture of them. And indeed, all Learning beside the Scripture, is but *ἐπὶ πολλῇ καὶ λογομα- χία τις ἀσποῦδος*, as *Theodoret* saith; that is, meere contention and strife of words not to be reconciled. Let us not then spend that time in vaine and needlesse speculations, which we should imploy in knowing God, and in working out our salvation with feare and trembling; *For it is life eternall to know God in Christ*: in respect of which excellent knowledge, the Apostle accounted all things but drosse and losse. *Moses* was a great Astronomer, yet he reckoned the knowledge of this, and of all the Egyptian wisdom, but *detrimentum & stultitiam*, but losse and foolishnesse in respect of the knowledge of holy Scripture, saith Saint *Ambrose*. Astronomers with *Martha*, are busie about many things, but the Divine with *Mary*, hath chosen the better part which shall never be taken from him. How small was the store of gold and silver which the Hebrewes brought out of Egypt, in comparifon of that wealth which under *Solomon* they had in Jerusalem? so small and meane is all humane knowledge compared to the Scripture: for whatsoever learning is nought it is condemned here, whatsoever is profitable it is to be found here; and more abundantly in the wonderfull height and depth of Scripture, then any where else, saith Saint *Austin*.

De Doctrina
Christian. L.
2. c. 41.

Let it then be our delight, *Nocturna versare manu, versare diurna*: still to be meditating in this holy Law of God; that like trees planted by the river side, wee may fructifie in due season. And as *Alexander* did carry about him *Homers Iliads* in the rich cabinet of *Darius*, even so let the holy Scripture be still our *Vade mecum*, and in the cabinet of our heart let us lay it up, as *Mary* did the words that were spoken of Christ. I may say of Scripture as the Apostle said of Christ, *Whither shall we goe from thee? thou hast the words of eternall life*. Thus briefly and by snatches (being with-drawne and distracted with many other busineses) have I answered your Booke, which I undertooke partly out of the confidence I have of the truth of our side; partly to vindicate my owne credit; partly to satisfie my friends; and lastly, to excite others whose abilities exceed mine to maintaine and defend the truth of our opinion, and to explode the contrary as false, which in time may prove dangerous and pernicious to Divinitie.



FINIS.



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